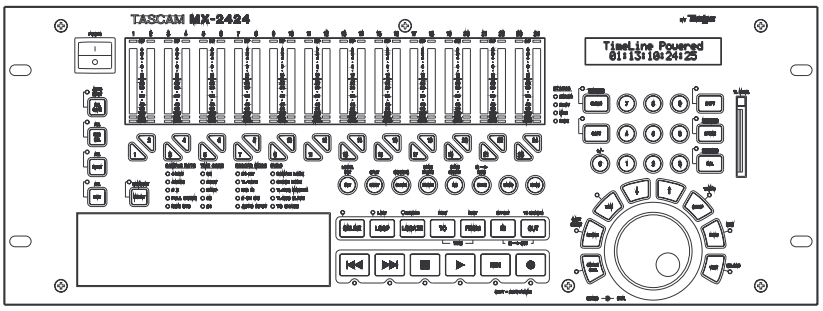
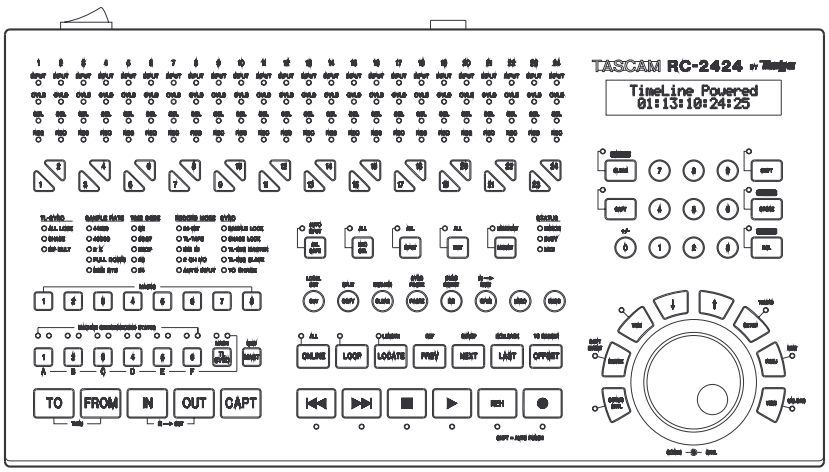
TASCAM
TEAC Professional Division

MX-2424
24 Track 24 Bit Hard Disk Recorder

RC-2424
Remote Control Unit

OWNER'S MANUAL





Important Safety Precautions

CAUTION: TO REDUCE THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE COVER (OR BACK). NO USER-SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.

The lightning flash with arrowhead symbol, within equilateral triangle, is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.

The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

This appliance has a serial number located on the rear panel. Please record the model number and serial number and retain them for your records.

Model number _____

Serial number _____

WARNING: TO PREVENT FIRE OR SHOCK HAZARD, DO NOT EXPOSE THIS APPLIANCE TO RAIN OR MOISTURE.

IMPORTANT (for U.K. Customers)

DO NOT cut off the mains plug from this equipment.
If the plug fitted is not suitable for the power points in your home or the cable is too short to reach a power point, then obtain an appropriate safety approved extension lead or consult your dealer.

If nonetheless the mains plug is cut off, remove the fuse and dispose of the plug immediately, to avoid a possible shock hazard by inadvertent connection to the mains supply.

If this product is not provided with a mains plug, or one has to be fitted, then follow the instructions given below:

IMPORTANT: The wires in this mains lead are coloured in accordance with the following code:

GREEN-AND-YELLOW	**:**	**EARTH**
BLUE	**:**	**NEUTRAL**
BROWN	**:**	**LIVE**

WARNING: This apparatus must be earthed.

As the colours of the wires in the mains lead of this apparatus may not correspond with the coloured markings identifying the terminals in your plug proceed as follows:

The wire which is coloured GREEN-and-YELLOW must be connected to the terminal in the plug which is marked by the letter E or by the safety earth symbol ç or coloured GREEN or GREEN-and-YELLOW.

The wire which is coloured BLUE must be connected to the terminal which is marked with the letter N or coloured BLACK.

The wire which is coloured BROWN must be connected to the terminal which is marked with the letter L or coloured RED.

When replacing the fuse only a correctly rated approved type should be used and be sure to re-fit the fuse cover.

IF IN DOUBT — CONSULT A COMPETENT ELECTRICIAN.

For U.S.A

TO THE USER

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residental area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

CAUTION
Changes or modifications to this equipment not expressly approved by TEAC CORPORATION for compliance could void the user's authority to operate this equipment.

For the consumers in Europe

WARNING
This is a Class A product. In a domestic environment, this product may cause radio interference in which case the user may be required to take adequate measures.

Pour les utilisateurs en Europe

AVERTISSEMENT
Il s'agit d'un produit de Classe A. Dans un environnement domestique, cet appareil peut provoquer des interférences radio, dans ce cas l'utilisateur peut être amené à prendre des mesures appropriées.

Für Kunden in Europa

Warnung
Dies is eine Einrichtung, welche die Funk-Entstörung nach Klasse A besitzt. Diese Einrichtung kann im Wohnbereich Funkstörungen versursachen ; in diesem Fall kann vom Betrieber verlang werden, angemessene Maßnahmen durchzuführen und dafür aufzukommen.

SAFETY INSTRUCTIONS

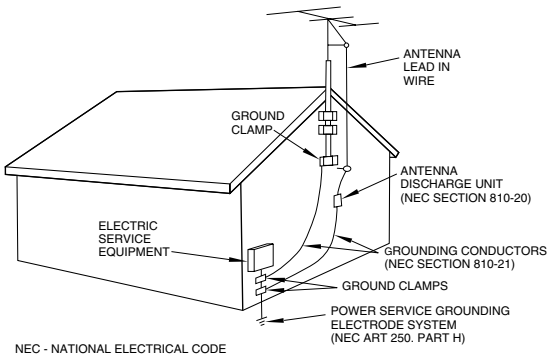
CAUTION:
- **Read all of these Instructions.**
- **Save these Instructions for later use.**
- **Follow all Warnings and Instructions marked on the audio equipment.**

1) Read instructions — All the safety and operating instructions should be read before the product is operated.
2) Retain instructions — The safety and operating instructions should be retained for future reference.
3) Heed Warnings — All warnings on the product and in the operating instructions should be adhered to.
4) Follow instructions — All operating and use instructions should be followed.
5) Cleaning — Unplug this product from the wall outlet before cleaning. Do not use liquid cleaners or aerosol cleaners. Use a damp cloth for cleaning.
6) Attachments — Do not use attachments not recommended by the product manufacturer as they may cause hazards.
7) Water and Moisture — Do not use this product near water – for example, near a bath tub, wash bowl, kitchen sink, or laundry tub; in a wet basement; or near a swimming pool; and the like.
8) Accessories — Do not place this product on an unstable cart, stand, tripod, bracket, or table. The product may fall, causing serious injury to a child or adult, and serious damage to the product. Use only with a cart, stand, tripod, bracket, or table recommended by the manufacturer, or sold with the product. Any mounting of the product should follow the manufacturer's instructions, and should use a mounting accessory recommended by the manufacturer.
9) A product and cart combination should be moved with care. Quick stops, excessive force, and uneven surfaces may cause the product and cart combination to overturn.

10) Ventilation — Slots and openings in the cabinet are provided for ventilation and to ensure reliable operation of the product and to protect it from overheating, and these openings must not be blocked or covered. The openings should never be blocked by placing the product on a bed, sofa, rug, or other similar surface. This product should not be placed in a built-in installation such as a bookcase or rack unless proper ventilation is provided or the manufacturer's instructions have been adhered to.
11) Power Sources — This product should be operated only from the type of power source indicated on the marking label. If you are not sure of the type of power supply to your home, consult your product dealer or local power company. For products intended to operate from battery power, or other sources, refer to the operating instructions.
12) Grounding or Polarization — This product may be equipped with a polarized alternating-current line plug (a plug having one blade wider than the other). This plug will fit into the power outlet only one way. This is a safety feature. If you are unable to insert the plug fully into the outlet, try reversing the plug. If the plug should still fail to fit, contact your electrician to replace your obsolete outlet. Do not defeat the safety purpose of the polarized plug.
13) Power-Cord Protection — Power-supply cords should be routed so that they are not likely to be walked on or pinched by items placed upon or against them, paying particular attention to cords at plugs, convenience receptacles, and the point where they exit from the product.
14) Outdoor Antenna Grounding — If an outside antenna or cable system is connected to the product, be sure the antenna or cable system is grounded so as to provide some protection against voltage surges and built-up static charges. Article 810 of the National Electrical Code, ANSI/NFPA 70, provides information with regard to proper grounding of the mast and supporting structure, grounding of the lead-in wire to an antenna discharge unit, size of grounding conductors, location of antenna-discharge unit, connection to grounding electrodes, and requirements for the grounding electrode.

"Note to CATV system installer:
This reminder is provided to call the CATV system installer's attention to Section 820-40 of the NEC which provides guidelines for proper grounding and, in particular, specifies that the cable ground shall be connected to the grounding system of the building, as close to the point of cable entry as practical.

Example of Antenna Grounding as per National Electrical Code, ANSI/NFPA 70


ANTENNA LEAD IN WIRE
GROUND CLAMP
ANTENNA DISCHARGE UNIT (NEC SECTION 810-20)
ELECTRIC SERVICE EQUIPMENT
GROUNDING CONDUCTORS (NEC SECTION 810-21)
GROUND CLAMPS
POWER SERVICE GROUNDING ELECTRODE SYSTEM (NEC ART 250. PART H)
NEC - NATIONAL ELECTRICAL CODE

15) Lightning — For added protection for this product during a lightning storm, or when it is left unattended and unused for long periods of time, unplug it from the wall outlet and disconnect the antenna or cable system. This will prevent damage to the product due to lightning and power-line surges.
16) Power Lines — An outside antenna system should not be located in the vicinity of overhead power lines or other electric light or power circuits, or where it can fall into such power lines or circuits. When installing an outside antenna system, extreme care should be taken to keep from touching such power lines or circuits as contact with them might be fatal.
17) Overloading — Do not overload wall outlets, extension cords, or integral convenience receptacles as this can result in risk of fire or electric shock.
18) Object and Liquid Entry — Never push objects of any kind into this product through openings as they may touch dangerous voltage points or short-out parts that could result in a fire or electric shock. Never spill liquid of any kind on the product.
19) Servicing — Do not attempt to service this product yourself as opening or removing covers may expose you to dangerous voltage or other hazards. Refer all servicing to qualified service personnel.
20) Damage Requiring Service — Unplug this product from the wall outlet and refer servicing to qualified service personnel under the following conditions:
a) when the power-supply cord or plug is damaged.
b) if liquid has been spilled, or objects have fallen into the product.
c) if the product has been exposed to rain or water.
d) if the product does not operate normally by following the operating instructions. Adjust only those controls that are covered by the operating instructions as an improper adjustment of other controls may result in damage and will often require extensive work by a qualified technician to restore the product to its normal operation.
e) if the product has been dropped or damaged in any way.
f) when the product exhibits a distinct change in performance – this indicates a need for service.
21) Replacement Parts — When replacement parts are required, be sure the service technician has used replacement parts specified by the manufacturer or have the same characteristics as the original part. Unauthorized substitutions may result in fire, electric shock, or other hazards.
22) Safety Check — Upon completion of any service or repairs to this product, ask the service technician to perform safety checks to determine that the product is in proper operating condition.
23) Wall or Ceiling Mounting — The product should be mounted to a wall or ceiling only as recommended by the manufacturer.
24) Heat — The product should be situated away from heat sources such as radiators, heat registers, stoves, or other products (including amplifiers) that produce heat.

CE Marking Information of MX-2424

a) Applicable Electromagnetic Environment: E4
b) Peak inrush current: A

Consignes de sécurité

ATTENTION:

- **Lire ces instructions intégralement.**
- **Conserver ces instructions pour un usage ultérieur.**
- **Suivre tous les avertissements et instructions marqués sur l'appareil audio.**

1. **Lire les instructions** – Toutes les consignes de sécurité et les instructions de fonctionnement doivent être lues avant de faire fonctionner l'appareil.

2. **Conserver ces instructions** – Les consignes de sécurité et les instructions de fonctionnement doivent être conservées pour une référence ultérieure.

3. **Tenir compte des avertissements** – Tous les avertissements sur l'appareil et dans les instructions de fonctionnement doivent être respectés.

4. **Suivre les instructions** – Toutes les instructions doivent être suivies.

5. **Nettoyage** – Débrancher cet appareil de la prise secteur avant nettoyage. Ne pas utiliser de détergents liquides ni aérosol. Utiliser un chiffon humide pour le nettoyage.

6. **Accessoires** – Ne pas utiliser d'accessoires non recommandés par le fabricant, ils peuvent être une cause d'accidents.

7. **Eau et condensation** – Ne pas utiliser cet appareil près de l'eau - par exemple, près d'une baignoire, d'un lavabo, d'un évier de cuisine, d'une installation de lavage, dans un local humide, ou près d'une piscine, etc.

8. **Supports** – Ne pas placer cet appareil sur un chariot, un support, un trépied ou une table instable. L'appareil pourrait tomber, causant des blessures sérieuses à un enfant ou à un adulte, et des dommages à l'appareil. L'utiliser seulement avec un chariot, support, trépied ou table recommandé par le fabricant, ou vendu avec l'appareil. Tout montage de l'appareil doit suivre les instructions du fabricant, et doit utiliser un accessoire de montage recommandé par le fabricant.

9. Un appareil et une combinaison à chariot doivent être déplacés avec précaution. Des arrêts brutaux, une force excessive, et des surfaces irrégulières peuvent faire basculer l'appareil et le chariot.

10. **Ventilation** – Les fentes et ouvertures dans le coffret sont prévues pour la ventilation et pour assurer un fonctionnement fiable de l'appareil en le protégeant de la surchauffe. Ces ouvertures ne doivent pas être bouchées ou recouvertes. Les ouvertures ne doivent jamais être bouchées comme en plaçant l'appareil sur un lit, un canapé, une couverture, ou sur d'autres surfaces similaires. L'appareil ne doit pas être placé dans une installation incorporée, comme une bibliothèque ou un coffret à moins qu'une ventilation correcte soit assurée ou que les instructions du fabricant l'autorisent.

11. **Sources d'alimentation** – L'appareil doit être raccordé à une source seulement du type indiqué sur la plaque signalétique. Si vous n'êtes pas sûr du type d'alimentation chez vous, consulter votre revendeur local ou la compagnie de distribution d'énergie locale. Pour des produits prévus pour fonctionner sur batteries, ou sur d'autres sources, se reporter aux instructions de fonctionnement.

12. **Mise à la terre et polarisation** – Cet appareil peut être équipé d'une fiche secteur polarisée (une fiche ayant une lame plus large que l'autre). Cette fiche rentre dans la prise de courant que d'une seule façon. C'est un élément de sécurité. Si vous ne pouvez pas introduire complètement la fiche dans la prise, essayer en la retournant. Si la fiche ne rentre toujours pas, contacter votre électricien pour qu'il vienne changer votre vieille prise. Ne pas anéantir l'objectif de sécurité de la fiche polarisée.

13. **Protection du cordon d'alimentation** – Les cordons d'alimentation doivent être placés pour ne pas marcher dessus ni les serrer par des objets placés sur ou contre eux. Faire particulièrement attention aux cordons, aux fiches, aux prises de courant commodes, et à l'endroit où ils sortent de l'appareil.

14. **Foudre** – Pour une protection accrue de cet appareil pendant un orage, ou quand il est laissé non utilisé pendant une longue période, le débrancher de la prise secteur et débrancher l'antenne ou le système câblé. Ce qui évitera des dommages à l'appareil à cause de la foudre et des surtensions sur la ligne d'alimentation.

15. **Lignes électriques** – Un système d'antenne extérieure ne doit pas être placé à proximité des lignes électriques ou d'autres circuits électriques, ou à des endroits où il peut tomber sur de tels circuits ou lignes. En installant un système d'antenne extérieure, une attention extrême doit être prise pour ne pas toucher de tels circuits ou lignes électriques, un contact pouvant être fatal.

16. **Surcharge** – Ne pas surcharger les prises secteur, les cordons de prolongement, ou des prises multiples, ce qui entraîne des risques d'incendie ou de chocs électriques.

17. **Entrée d'objet et de liquide** – Ne jamais pousser d'objets quelconques dans l'appareil par ses ouvertures, ils pourraient toucher des points sous tension dangereuse ou faire des court-circuits entre des pièces qui pourrait générer un incendie ou des chocs électriques. Ne jamais verser de liquide sur ou dans l'appareil.

18. **Dépannage** – Ne pas essayer de réparer l'appareil soi-même car l'ouverture et le retrait des capots peut vous exposer à des tensions dangereuses et d'autres dangers. Confier toutes les opérations de réparation à du personnel de service qualifié.

19. **Dommages nécessitant une réparation** – Débrancher l'appareil de la prise secteur et confier les réparations à du personnel qualifié quand:
    A. Le cordon d'alimentation secteur ou la fiche est endommagé.
    B. Des objets sont tombés, ou du liquide a coulé dans l'appareil.
    C. L'appareil a été exposé à la pluie ou à l'eau.
    D. L'appareil ne fonctionne pas normalement en suivant les instructions de fonctionnement. Régler seulement les commandes indiquées dans les instructions de fonctionnement, car un mauvais réglage des autres commandes peut provoquer des dommages et demander souvent un long travail par un technicien qualifié pour faire revenir l'appareil en fonctionnement normal.
    E. L'appareil est tombé, ou le coffret a été endommagé.
    F. L'appareil montre un net changement dans ses performances - ce qui indique un besoin de réparation.

20. **Pièces de rechange** – Quand des pièces de rechange sont nécessaires, s'assurer que le technicien a utilisé des pièces de rechange spécifiées par le fabricant ou ont les mêmes caractéristiques que les pièces d'origine. Des substitutions non autorisées peuvent être la cause d'un incendie, de chocs électriques ou d'autres dangers.

21. **Contrôle de sécurité** – Après toute opération d'entretien ou de réparation de cet appareil, demander au technicien d'effectuer les contrôles de sécurité pour s'assurer que le produit est en parfait état de fonctionnement.

22. **Fixation au mur ou au plafond** – L'appareil doit être fixé au mur ou au plafond seulement si recommandé par le fabricant.

23. **Chaleur** – L'appareil doit être placé loin des sources de chaleur comme des radiateurs, des appareils de chauffage, ou d'autres appareils (comprenant les amplificateurs) qui produisent de la chaleur.

Sicherheitshinweise

VORSICHT:
- **Lesen Sie die folgenden Angaben bitte sorgfältig durch.**
- **Bewahren Sie diese Angaben zur späteren Bezugnahme auf.**
- **Beachten Sie alle Warnhinweise und Typenschildangaben am Gerät.**

1. **Lesen Sie diese Bedienungsanleitung sorgfältig durch** – Vor der Inbetriebnahme bitte die Sicherheits- und Bedienungsanweisungen durchlesen.

2. **Bewahren Sie diese Bedienungsanleitung auf** – So können Sie bei später auftretenden Fragen nachschlagen.

3. **Beachten Sie alle Warnhinweise** – Dies gilt für die Warnhinweise am Gerät und in der Bedienungsanleitung.

4. **Befolgen Sie alle Bedienungsanweisungen.**

5. **Reinigung** – Vor der Reinigung das Netzkabel abtrennen. Keine Naß- oder Sprühreiniger verwenden. Mit einem feuchten Tuch reinigen.

6. **Zusatzgeräte** – Die Verwendung von Zusatzgeräten, die nicht mit den Herstellerempfehlungen übereinstimmen, kann Schäden verursachen.

7. **Nässe und Feuchtigkeit** – Dieses Gerät nicht in unmittelbarer Nähe zu Wasserbehältern (Badewanne, Küchenspüle, Schwimmbecken etc.) oder in Räumen, in denen hohe Luftfeuchtigkeit auftreten kann, betreiben.

8. **Aufstellung** – Niemals einen instabilen Untersatz (fahrbares oder stationäres Gestell, Regal, Halterung, Tisch) verwenden! Andernfalls kann das Gerät herabfallen und hierdurch ernsthaft beschädigt werden sowie ernsthafte Verletzungen hervorrufen! Ausschließlich einen geeigneten und stabilen Untersatz (mitgeliefert oder vom Hersteller empfohlen) benutzen! Zur Befestigung unbedingt die Herstellerangaben beachten und ausschließlich empfohlenes Zubehör verwenden.

9. Bei einem fahrbaren Gestell insbesonders plötzliche Richtungswechsel und zu rasches Beschleunigen/Bremsen sowie unebenen Untergrund vermeiden, da andernfalls Gestell und/oder Gerät umfallen können.

10. **Belüftung** – Die Belüftungsöffnungen des Geräts dürfen niemals blockiert werden. Andernfalls können Überhitzung und Betriebsstörungen auftreten. Das Gerät daher niemals auf einer weichen Unterlage (Kissen, Sofa, Teppich etc.) aufstellen. Bei Einbau in einem Regal/Gestell- oder Einbauschrankfach unbedingt auf einwandfreien Temperaturausgleich achten. Die diesbezüglichen Herstellerangaben beachten.

11. **Spannungsversorgung** – Unbedingt die diesbezüglichen Angaben am Gerät beachten! Bei Fragen wenden Sie sich bitte an Ihren Fachhändler oder die verantwortlichen Energieversorger an Ihrem Wohnort. Bei Geräten, die für Batteriebetrieb oder eine andere Spannungsquelle geeignet sind, die zugehörige Bedienungsanleitung beachten.

12. **Erdung/Polarisierung** – Wenn dieses Gerät mit einem Flachklingen-Netzstecker mit unterschiedlicher Klingenbreite ausgerüstet ist, ist der Netzanschluß nur in einer Steckerstellung möglich. Dies ist eine Sicherheitsvorkehrung. Wenn der Stecker nicht eingeschoben werden kann, die Kontaktposition umkehren. Ist hierauf kein Anschluß möglich, muß die Steckdose (von einer Fachkraft) ausgewechselt werden. Niemals den Stecker umbauen!

13. **Netzkabel** – Das Netzkabel so verlegen, daß es nicht beiastet, gequetscht oder geknickt werden kann. Insbesonders darauf achten, daß keine Schäden am Stecker, an der Steckdose oder am Netzkabelausgang des Geräts auftreten können!

14. **Blitzschutz** – Bei Gewittern und längerem Nichtgebrauch des Geräts den Netzstecker und das Antennen-/Kabel-System-Kabel abziehen, um Schäden durch Blitzschlag und/oder Spannungstöße zu vermeiden.

15. **Starkstromleitungen** – Die Außenantenne und zugehörige Kabel stets in ausreichendem Abstand zu Hochspannungs-, Licht- und anderen Stromleitungen und montieren, so daß keinerlei Kontakte möglich sind. Beim Montieren einer Außenantenne besteht Lebensgefahr, wenn Netz- und Starkstromleitungen berührt werden!

16. **Netzüberlastung** – Netzsteckdosen, Verlängerungskabel oder Steckdosenverteiler niemals überlasten, da andernfalls Stromschlag- und Brandgefahr besteht!

17. **Eindringen von Fremdkörpern und Flüssigkeit** – Niemals Gegenstände in die Geräteöffnungen einführen, da andernfalls Stromschlag- und Brandgefahr besteht! Sicherstellen, daß keine Flüssigkeit in das Geräteinnere eindringen kann.

18. **Kundendienst** – Niemals selber Wartungsarbeiten vornehmen. Bei geöffnetem Gehäuse besteht Stromschlag- und Verletzungsgefahr. Überlassen Sie Wartungsarbeiten stets qualifiziertem Fachpersonal.

19. **Schadensbehebung in Fachwerkstätten** – In den folgenden Fällen müssen Prüf- und/oder Wartungsarbeiten von qualifiziertem Fachpersonal durchgeführt werden:
    A. Bei beschädigtem Netzkabel oder -stecker.
    B. Wenn sich Flüssigkeit oder Fremdkörper im Geräteinneren befinden.
    C. Wenn das Gerät Nässe oder Feuchtigkeit ausgesetzt war.
    D. Wenn bei vorschriftsgemäßer Handhabung Betriebsstörungen auftreten. Bei Störungen nur Gegenmaßnahmen durchführen, die in der Bedienungsanleitung beschrieben werden. Andernfalls keine weiteren Schritte vornehmen, da hierdurch Schäden versuacht werden können, die Reparaturarbeiten durch Fachpersonal erfordern.
    E. Wenn das Gerät einer heftigen Erschütterung ausgesetzt war oder anderweitig beschädigt wurde.
    F. Bei Leistungsbeeinträchtigungen jeder Art.

20. **Teiletausch** – Wenn ein Teiletausch erforderlich wird, die Einhaltung der vom Hersteller vorgeschriebenen Ausführungen und technischen Kenndaten beachten. Nicht zulässige Teile können Brand- und Stromschlaggefahr sowie andere ernsthafte Störungen verursachen.

21. **Sicherheitsüberprüfung** – Nach Kundendienst- und Reparaturarbeiten vom Fachpersonal stets eine Sicherheitsüberprüfung vornehmen lassen, um einwandfreien Betrieb zu gewährleisten.

22. **Wand- und Deckenbefestigung** – Hierzu unbedingt die Vorschriften und Empfehlungen des Herstellers beachten.

23. **Hitzeinwirkung** – Das Gerät in ausreichender Entfernung zu hitzeabstrahlenden Vorrichtungen (Heizung, Ofen etc.) und anderen Geräten (Verstärker etc.) aufstellen.

Norme di sicurezza

ATTENZIONE:

- **Leggete attentamente tutte queste istruzioni.**
- **Conservate queste istruzioni per poterle utilizzare in caso di bisogno.**
- **Seguite tutte le avvertenze e le istruzioni affisse sul componente stesso.**

1. **Leggete le istruzioni** – Tutte le istruzioni per la sicurezza e l'uso devono essere lette prima di utilizzare l'unità.

2. **Conservate le istruzioni** – Le istruzioni per la sicurezza e l'uso devono essere conservate per poterle utilizzare in caso di bisogno.

3. **Prestate attenzione alle avvertenze** – Tutte le avvertenze, sia sull'unità che nelle istruzioni, devono essere rispettate scrupolosamente.

4. **Seguite le istruzioni** – Tutte le istruzioni per l'uso devono essere seguite.

5. **Pulizia** – Prima della pulizia scollegare questa unità dalla presa di rete. Non utilizzare agenti di pulizia liquidi o aerosol. Pulire l'unità utilizzando un panno umido.

6. **Accessori** – Non utilizzare accessori non raccomandati dal fabbricante in quanto ciò potrebbe comportare dei rischi.

7. **Acqua ed umidità** – Non utilizzare questa unità vicino all'acqua - per esempio, vicino a vasche da bagno, lavabi e lavandini; in scantinati umidi; vicino ad una piscina, ecc..

8. **Supporti** – Non installare questa unità su carrelli, scaffali, treppiedi, staffe o tavoli instabili. L'unità potrebbe cadere causando lesioni a bambini ed adulti e danni all'unità stessa. Utilizzare solo carrelli, scaffali, treppiedi, staffe o tavoli raccomandati dal fabbricante o venduti assieme all'unità. Qualsiasi installazione dell'unità deve seguire le istruzioni del fabbricante ed utilizzare gli accessori raccomandati dallo stesso.

9. L'unità installata su di un carrello seve essere spostata con attenzione. Fermate brusche, spinte eccessive e superfici accidentate possono causare il rovesciamento del carrello.

10. **Ventilazione** – Le fessure e le aperture sul mobiletto sono fornite per la ventilazione, per assicurare il funzionamento affidabile dell'unità e per prevenirne il surriscaldamento e perciò non devono essere bloccate o coperte. Le aperture non devono essere bloccate ponendo l'unità su di un letto, sofà, tappeto o altra superficie simile. Questa unità non deve essere installata all'interno di scaffali o mobili a meno che essi non siano provvisti di un'appropriata ventilazione e le ,istruzioni del fabbricante siano seguite scrupolosamente.

11. **Alimentazione** – Questa unità deve essere utilizzata solo col tipo alimentazione indicato sull'etichetta. Se non siete certi del tipo di alimentazione della vostra abitazione, consultate iul vostro rivenditore o l'azienda elettrica locale. Per i prodotti da utilizzare con le batterie o con altre fonti di alimentazione, vedere le istruzioni per l'uso.

12. **Messa a terra e polarizzazione** – Questa unità potrebbe essere fornita di una spina per corrente alternata polarizzata (una spina con una lama più larga dell'altra). Questa spina può essere inserita nella presa di rete in una sola direzione. Questa è una caratteristica per la sicurezza. Se non siete in grado di inserire completamente la spina, provate e girarla. Se non fosse ancora possibile inserire la spina, chiamare l'elettricista per sostituire la presa. Non evitare lo scopo della presa polarizzata.

13. **Protezione del cavo di alimentazione** – I cavi dell'alimentazione devono essere sistemati in modo che essi non vengano calpestati o pizzicati da oggetti o persone facendo particolare attenzione alle giunzioni con spine e prese ed ai punti di uscita dalle varie unità.

14. **Fulmini** – Per la protezione dell'unità durante temporali con fulmini oppure quando l'unità non viene utiliuzzata per lunghi periodi, scollegare la spina del cavo di alimentazione dalla presa di rete e scollegare l'antenna o il collegamento via cavo.

15. **Linee ad alta tensione** – L'antenna esterna non deve essere installata in prossimità di linee ad alta tensione o altre linee elettriche oppure in posizioni in cui possa cadere su tali linee. Quando si installa un'antenna esterna prestare estrema attenzione a non toccare tali linee in quanto tale contatto potrebbe essere fatale.

16. **Sovraccarichi** – Non sovraccaricare le prese di rete o i cavi di estensione in quanto ciò può causare il rischio di incendi o scosse elettriche.

17. **Ingresso di oggetti o di liquidi** – Non iserire mai alcun tipo di oggetto attraverso le aperture dell'unità in quanto essi potrebbero entrare in contatto con punti ad alta tensione o causare un cortocircuito che potrebbe a sua volta causare il rischio di incendi o scosse elettriche. Non versare alcun tipo di liquido sul prodotto.

18. **Assistenza** – Non eseguire alcuna procedura di assistenza in quanto l'apertura e la rimozione dei coperchi potrebbe esporvi ad alta tensione o altri rischi. Rivolgetevi a personale qualificato per tutti gli interventi di assistenza.

19. **Circostanze che richiedono assistenza** – Scollegate l'unità dalla presa di rete e rivolgetevi a personale di assistenza specializzato nelle seguenti circostanze:
    A. Quando il cavo o la spina di alimentazione sono danneggiati.
    B. Se del liquido o un oggetto fossero penetrati all'interno dell'unità.
    C. Se l'unità fosse atata esposta a pioggia o acqua.
    D. Se l'unità non funzionasse normalmente seguendo le istruzioni per l'uso. Regolare solo i comandi descritti nelle istruzioni per l'uso dato che una regolazione scorretta di altri comandi potrebbe causare danni e richiede spesso un intervento da parte di un tecnico qualificato per il ripristino del funzionamento normale.
    E. Se l'unità fosse stata fatta cadere o comunque danneggiata.
    F. Quando le prestazioni dell'unità cambiano in modo distinto – ciò indica la necessità di assistenza.

20. **Parti di ricambio** – Quando sono necessarie delle parti di ricambio, accertarsi che il tecnico utilizzi parti specificate dal fabbricante o con le stesse caratteristiche della parte originale. Sostituzioni con parti non autorizzate possono causare fiamme, scosse elettriche o altri rischi.

21. **Controlli sicurezza** – Al termine di qualsiasi servizio di assistenza o riparazione, chiedete al tecnico di eseguire i controlli di sicurezza per determinare che il prodotto sia in condizione di funzionare in modo corretto.

22. **Montaggio su parete o soffitto** – L'unità deve essere montata su di una parete o sul soffitto solo seguendo le raccomandazioni del fabbricante.

23. **Calore** – L'unità deve essere installata lontano da fonti di calore come radiatori, caloriferi, stufe o altri prodotti (inclusi amplificatori) che producono calore.

Instrucciones de seguridad

ATENCION:
- **Lea todas estas instrucciones.**
- **Guarde estas instrucciones para referencia futura.**
- **Cumpla con todas las advertencias e instrucciones marcadas en el equipo de audio.**

1. **Lea las instrucciones** – Todas las instrucciones de seguridad y de operación deben ser leídas antes de operar el producto.

2. **Guarde las instrucciones** – Las instrucciones de seguridad y operación deben ser guardadas para referencia futura.

3. **Cumpla con las advertencias** – Todas las advertencias en el producto y en las instrucciones de operación deben ser observadas.

4. **Siga las instrucciones** – Es imprecindible cumplir con todas las instrucciones de operación y uso.

5. **Limpieza** – Desenchufe este producto del tomacorriente de la pared antes de limpiarlo. No utilice líquidos o aerosoles para limpieza. Utilice un paño húmedo para limpiarlo.

6. **Accesorios** – No utilice accesorios que no sean recomendados por el fabricante del producto, ya que pueden ser peligrosos.

7. **Agua y humedad** – No utilice este producto cerca del agua, por ejemplo cerca de la bañera, pileta para lavarse las manos o de la cocina, cerca del lavadero, en un sótano húmedo o cerca de una piscina de natación o similar.

8. **Instalación correcta** – No coloque este producto sobre lugares tales como carritos, pedestales, trípodes, soportes o mesas inestables. El producto puede caerse causando graves lesiones a los niños o adultos y graves daños al producto. Utilice los carritos, pedestales, trípodes, soportes o mesas recomendadas por el fabricante o vendidas con el producto. Todas las instalaciones del producto deben seguir las instrucciones del fabricante y deben utilizar un accesorio de montaje recomendado por el mismo.

9. El producto y el carrito para transporte deben ser movidos con precaución. Las paradas bruscas, la fuerza excesiva y las superficies desniveladas pueden hacer que el producto y el carrito se vuelquen.

10. **Ventilación** – Las ranuras y aberturas en el gabinete son para ventilación y para asegurar el confiable funcionamiento del producto protegiéndolo del recalentamiento. Estas aberturas no deben ser bloqueadas o cubiertas. Las aberturas nunca deben ser bloqueadas al colocar el producto sobre la cama, sofá, paño, u otra superficie similar. Este producto no debe ser colocado dentro de un lugar encerrado tal como caja para libros o estantería a menos que se suministre una ventilación adecuada o que se cumpla con las instrucciones del fabricante.

11. **Fuentes de energía** – Este producto debe ser operado sólo con la fuente de energía indicada en la etiqueta con la marca. Si usted no está seguro del tipo de suministro de energía de su hogar, consulte con el agente del producto o con la compañía de energía eléctrica local. Para productos a ser operados con pilas u otras fuentes refiérase a las instrucciones de operación.

12. **Conexión a masa y polarización** – Este producto puede estar equipado con un enchufe de línea de corriente alterna polarizado (un enchufe que tiene una cuchilla más ancha que la otra). Este enchufe entrará en el tomacorrientes de una sola manera. Esta es una característica de seguridad. Si usted no puede insertar totalmente el enchufe en el tomacorriente, intente invertir el enchufe. Si aún éste no entra, llame a su electricista para que reemplace el tomacorriente. No rompa ni modifique el mecanismo de seguridad del enchufe polarizado.

13. **Protección del cordón eléctrico** – Los cordones eléctricos para alimentación deben ser colocados de tal manera que no se los pise o queden pellizcados por elementos colocados sobre o contra ellos, siendo necesario prestar atención particular en los puntos donde los cordones salen de los enchufes, enchufes múltiples y otros puntos del producto.

14. **Rayos** – Para protección adicional de este producto durante tormentas de rayos, o cuando se lo deja sin atención o no se lo usa durante largos períodos, desenchúfelo del tomacorriente de la pared y desconecte el sistema de antena o de cable. Esto evitará los daños producidos en el producto por los rayos y aumentos bruscos de voltaje de la línea.

15. **Cables eléctricos** – No se debe instalar el sistema exterior de antena en la vecindad de cables eléctricos elevados o de otros circuitos de iluminación eléctrica o eléctricos, o cuando la antena pueda caer sobre tales cables o circuitos. Cuando se instala un sistema exterior de antena, se deben tomar precauciones extremadas para no tocar tales cables o circuitos eléctricos, ya que el contacto con los mismos puede ser fatal.

16. **Sobrecarga** – No sobrecargue los tomacorrientes de la pared, los cables de extensión o los enchufes múltiples ya que ello puede aumentar el riesgo de incendios o choques eléctricos.

17. **Entrada de objetos y líquidos** – Nunca coloque objetos de ningún tipo dentro de este producto a través de las aberturas ya que pueden entrar en contacto con puntos de alto voltaje o porciones en corto lo que resultará en un incendio o choque eléctrico. Nunca derrame líquido de ningún tipo sobre el producto.

18. **Reparación** – No intente reparar este producto por sí mismo ya que la abertura o extracción de cubiertas puede exponerlo a voltajes y otros peligros. Refiera todas las reparaciones a personal cualificado de servicio.

19. **Daños que requieren reparación** – Desenchufe este producto del tomacorriente de la pared y refiera la reparación a personal cualificado de servicio en caso de las siguientes condiciones:
    A. Cuando el cordón eléctrico de alimentación está dañado.
    B. Si se ha derramado líquido o se han caído objetos dentro del producto.
    C. Si el producto ha sido expuesto a la lluvia o al agua.
    D. Si el producto no funciona normalmente aunque se cumpla con las instrucciones de operación. Ajuste sólo los controles que están indicados en las instrucciones de operación ya que el ajuste incorrecto de otros controles puede resultar en daños que requieren frecuentemente un extensivo trabajo por parte de un técnico cualificado, para devolver el producto a su funcionamiento normal.
    E. Si el producto se ha caído o dañado de alguna manera.
    F. Cuando el producto presenta cambios inequívocos de rendimiento, lo que indica la necesidad de reparación.

20. **Reemplazo de piezas** – Si el reemplazo de piezas es necesario, asegúrese que el técnico de reparación ha usado las piezas especificadas por el fabricante o que tengan características idénticas a las piezas originales. Las substituciones no autorizadas pueden resultar en incendio, choque eléctrico y otros peligros.

21. **Inspección de seguridad** – Después de completar cualquier servicio o reparación en este producto, solicítele al técnico de reparación que efectúe comprobaciones de seguridad para determinar que el producto está en condiciones correctas de operación.

22. **Montaje en la pared o techo** – El producto debe ser montado en una pared o en el techo sólo como lo recomienda el fabricante.

23. **Calor** – El producto debe estar lejos de fuentes de calor tales como radiadores, orificios de salida de calor, estufas u otros productos (incluyendo amplificadores), que produzcan calor.

Veiligheidsvoorschriften

OPGELET:

- **Lees al deze aanwijzingen aandachtig door.**
- **Bewaar de gebruiksaanwijzing voor eventueel later gebruik.**
- **Neem de op het toestel aangegeven waarschuwingen en aanwijzingen in acht.**

1. **Lees de gebruiksaanwijzing** – Lees de veiligheidsvoorschriften en alle overige aanwijzingen in deze gebruiksaanwijzing alvorens het toestel in gebruik te nemen.

2. **Bewaar de gebruiksaanwijzing** – Bewaar de gebruiksaanwijzing voor eventueel later gebruik.

3. **Neem de waarschuwingen in acht** – Volg alle waarschuwingen op die op het toestel en in de gebruiksaanwijzing zijn aangegeven.

4. **Volg de aanwijzingen op** – Volg alle veiligheids- en gebruiksaanwijzingen op.

5. **Reiniging** – Trek de stekker uit het stopkontakt alvorens het toestel te reinigen. Gebruik geen vloeibare reinigingsmiddelen of spuitbussen. Gebruik een vochtig doekje voor het reinigen.

6. **Hulpstukken** – Gebruik geen hulpstukken die niet specifiek door de fabrikant zijn aanbevolen. Hierdoor kan beschadiging ontstaan.

7. **Water en vocht** – Gebruik het toestel niet in de buurt van water — zoals bijvoorbeeld in de buurt van een bad, aanrecht, wasgelegenheid, in een vochtige kelder, bij een zwembad, enz.

8. **Accessoires** – Plaats dit toestel niet op een instabiel rek of standaard, of op een wankel tafeltje. Het toestel kan hierdoor vallen en beschadigen of zelfs verwondingen veroorzaken. Gebruik alleen een bijgeleverd of door de fabrikant aanbevolen rek of standaard. Volg bij installatie in een rek de aanwijzingen van de fabrikant, en gebruik de door de fabrikant aanbevolen bevestigingsmiddelen.

9. Verplaats een verrijdbaar rek of standaard voorzichtig. De standaard met de apparatuur kan omvallen bij het abrupt stoppen, uitoefenen van overmatige kracht, of bij het verrijden over een ongelijke vloer.

10. **Ventilatie** – In de ombouw van het toestel bevinden zich ventilatiegleuven en -openingen welke moeten voorkomen dat het toestel tijdens gebruik oververhit raakt. Deze openingen mogen nooit worden geblokkeerd of afgedekt. Plaats het toestel daarom nooit op een bed, tapijt, bank of dergelijk oppervlak. Plaats het toestel tevens nooit in een nauw afgesloten ruimte als een boekenkast of dicht rek tenzij de ventilatie hierdoor niet wordt belemmerd en de aanwijzingen van de fabrikant in acht worden genomen.

11. **Stroomvoorziening** – Gebruik dit toestel alleen met een stroomvoorziening die voldoet aan de specifikaties aangegeven op het label op de ombouw. Bent u niet zeker van het voltage van het lichtnet, neem dan kontakt op met uw dealer of het elektriciteitsbedrijf ter plaatse. Zie de gebruiksaanwijzing voor nadere informatie als het toestel is bedoeld voor gebruik op batterijen of een akku.

12. **Aarding en polarisatie** – Dit toestel zal mogelijk zijn uitgerust met een gepolariseerde wisselstroom netstekker (een stekker waarvan een van de polen breder dan de andere is). Dit type stekker past alleen in een daarvoor bestemd stopkontakt. Mocht het niet lukken om de stekker in het stopkontakt te stekken, probeer het dan opnieuw met de stekker omgedraaid. Lukt het dan nog steeds niet, neem dan kontakt op met uw dealer voor vervanging van de stekker. Probeer nooit de stekker in het stopkontakt te forceren.

13. **Bescherming van het netsnoer** – De netsnoeren dienen zo te worden geleid dat er zo min mogelijk over wordt gelopen of dat er voorwerpen op tegen het snoer drukken. Let vooral op de stekkers, hulpstopkontakten en het punt waar de snoeren uit het toestel komen.

14. **Onweer** – Uit het oogpunt van veiligheid wordt het aangeraden om tijdens onweer, of als het toestel langere tijd niet gebruikt gaat worden, de stekker uit het stopkontakt te trekken en de antenne of het kabelsysteem te ontkoppelen. Hierdoor zal worden voorkomen dat het toestel bij een blikseminslag of door een spanningspiek in het net beschadigd.

15. **Elektriciteitsleidingen** – Plaats de buitenantenne goed uit de buurt van elektriciteitsleidingen en andere stroomcircuits zodat deze daar bij omvallen geen kontakt mee kan maken. Pas tevens bij het installeren van een antennesysteem er goed voor op geen kontakt te maken met dergelijke leidingen daar dit een dodelijk schok kan veroorzaken.

16. **Overbelasting** – Pas op stopkontakten, verlengsnoeren en stekkerdozen niet te overbelasten daar dit brand of een gevaarlijke elektrische schok kan veroorzaken.

17. **Voorwerpen of vocht in het toestel** – Zorg dat er nooit voorwerpen door de openingen in het inwendige van het toestel terecht komen. Hierdoor kan kortsluiting en een gevaarlijke elektrische schok worden veroorzaakt. Pas tevens goed op nooit vloeistoffen in het toestel te morsen.

18. **Reparatie** – Probeer nooit zelf het toestel te repareren. Bij verwijdering van de ombouw zult u bloot kunnen staan aan gevaarlijke elektrische spanning en andere gevaren. Laat reparaties over aan een bevoegd vakman.

19. **Beschadigingen die onderhoud vereisen** – In de volgende gevallen dient u de stekker uit het stopkontakt te trekken en de hulp van een erkend vakman in te schakelen.
    A. Als het netsnoer of de stekker is beschadigd.
    B. Als er vloeistof of voorwerpen in het toestel terecht komen.
    C. Als het toestel aan regen of vocht heeft blootgestaan.
    D. Als het toestel niet goed funktioneert bij bediening volgens de gebruiksaanwijzing. Kom alleen aan de regelaars en bedieningselementen die in de gebruiksaanwijzing worden beschreven. Onjuist afstelling van niet voor de gebruiker bedoelde regelaars kan tot beschadiging leiden. Bovendien zal vaak de hulp van een vakman nodig zijn om het toestel terug in de normale bedrijfsfunktie te stellen.
    E. Als het toestel is gevallen of anderszins beschadigd.
    F. Als de prestaties van het toestel merkbaar verminderen.

20. **Vervangingsonderdelen** – Bij vervanging van onderdelen dient de onderhoudsmonteuur alleen door de fabrikant aangegeven onderdelen te gebruiken, of onderdelen die daaraan identiek zijn. Worden andere onderdelen gebruikt, dan kan dit brand, elektrische schok of andere gevaren veroorzaken.

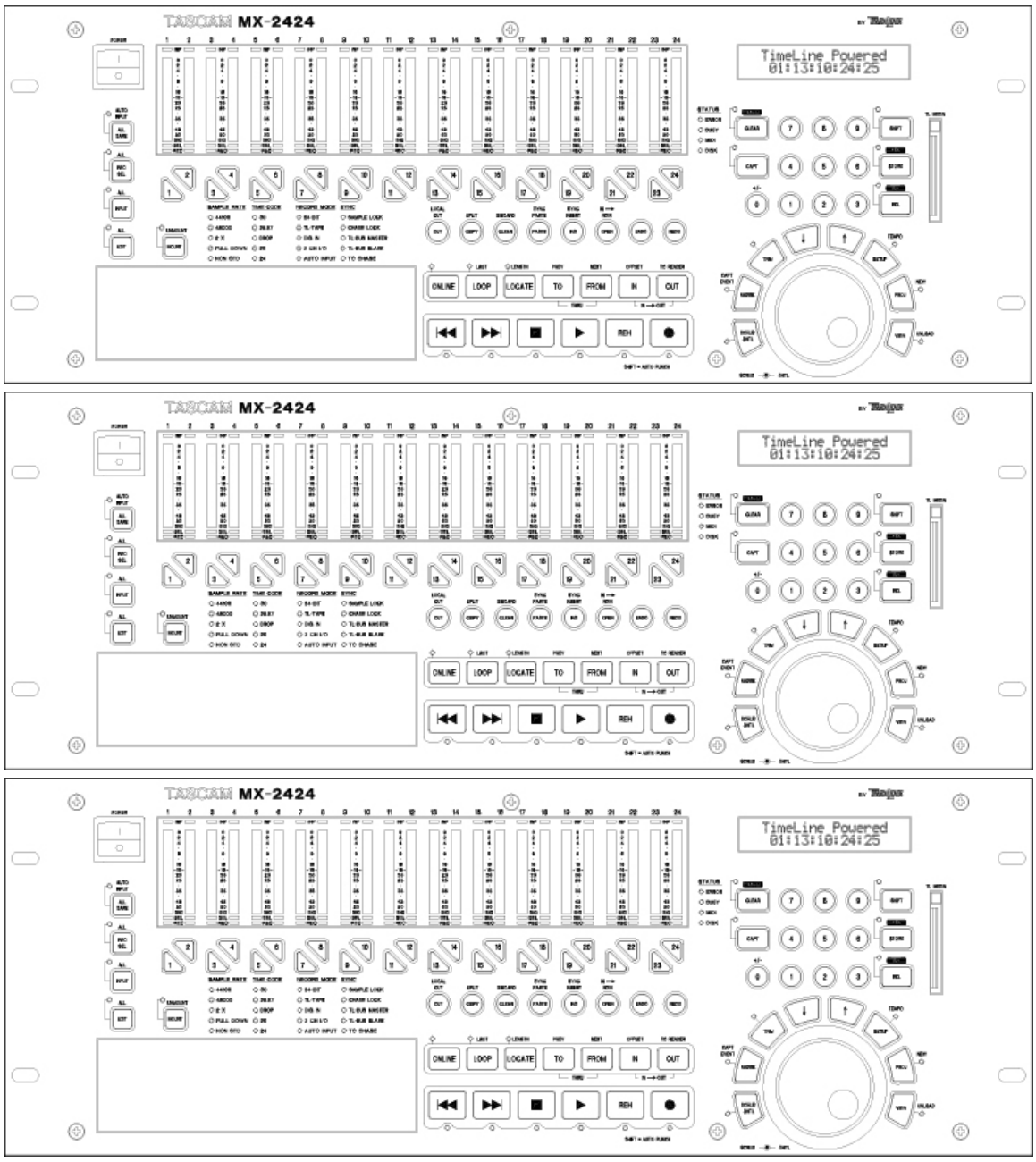
21. **Veiligheidskontrole** – Na onderhoud en reparatie dient de onderhoudsmonteur altijd een veiligheidskontrole uit te voeren om vast te stellen of het toestel goed en veilig funktioneert.

22. **Bevestiging tegen muur of plafond** – Bevestig het toestel alleen tegen een muur of plafond als de fabrikant dit specifiek als een mogelijkheid heeft aangegeven.

23. **Warmte** – Plaats het toestel uit de buurt van warmtebronnen als kachels, radiators, ovens of andere toestellen die warmte afgeven (zoals bijvoorbeeld versterkers).

Installing The MX-2424

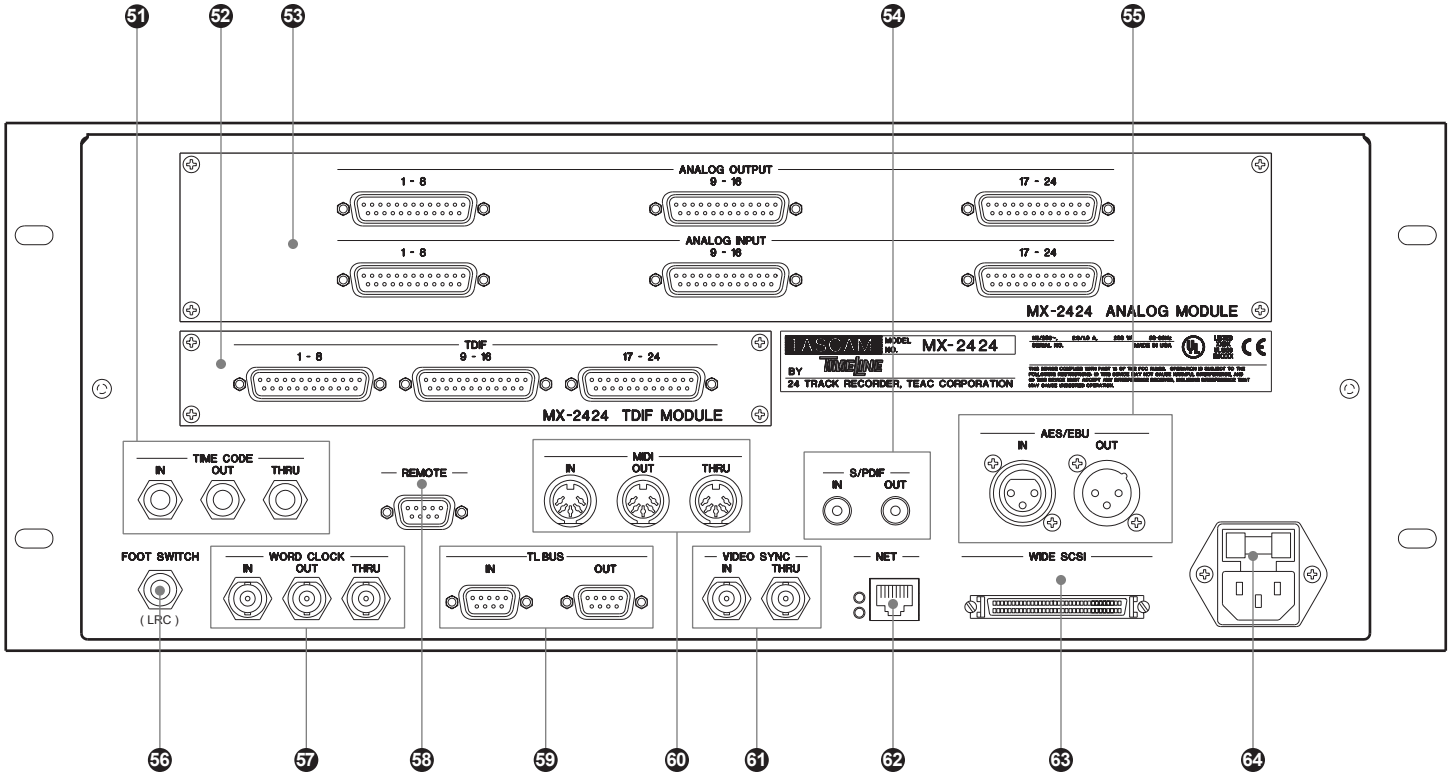
Multiple units can be mounted on top of each other when forced air rack ventilation is provided. a one inch clearance is required on both sides of the MX-2424 **(even in single-unit installations)**. In facilities with raised computer-room style flooring, a ventilation opening in the floor is recommended. In no case should the internal rack temperature ever exceed 100 degrees Fahrenheit (43 degrees Centigrade) during operation (as measured at the rear of any MX-2424 in the system).



When mounting MX-2424's on top of each other in a rack the feet may be removed by unscrewing them.

To replace the feet:
1. Insert the fastener into the foot
2. Snap the fastener & foot back into the hole in the bottom of the MX-2424 chassis
3. Snap the screw into the fastener's hole

MX-2424 REAR PANEL



REAR PANEL

The back panel is where all connections are made and user-installable modular I/O options may be installed. The internal auto-switching power supply provides both 110 and 220 volt operation. For installation instructions of any optional I/O modules please refer to *MX-2424 Installation*.

[53] Analog to Digital/Digital to Analog Module

The A/D/D/A module provides 24 channels of analog to digital and digital to analog conversion at 24 bit 44.1k/48k or 12 channels of 24 bit 96k on six DB-25 connectors. All converters used are the same to ensure consistent high quality audio across the entire machine.

[52] Digital I/O Options

There are three different 24 track digital options for the MX-2424: TDIF, ADAT™ Optical, and AES/EBU. The AES/EBU module supports input sample rate conversion.

[55] AES/EBU Connectors

AES/EBU Female Connector:
This connector allows the input of AES/EBU stereo digital audio, which can then be routed to any odd/even pair of tracks. Sample rate conversion may be applied to audio coming in on this connector.

AES/EBU digital clock may be received by the MX-2424 on this input as needed.

AES/EBU Male Connector:
This connector will output stereo AES/EBU digital audio and clock from a selectable stereo pair of adjacent odd/even tracks. The default setting is clock only.

[54] S/PDIF Connectors

S/PDIF Coaxial Input Connector:
This connector allows the input of S/PDIF stereo digital audio, which can then be routed to any odd/even pair of tracks. Sample rate conversion may be applied to audio coming in on this connector.
S/PDIF digital clock may be received by the MX-2424 this input as needed.

S/PDIF Coaxial Output Connector:
This connector will output stereo S/PDIF digital audio and clock from a selectable stereo pair of adjacent odd/even tracks. The default setting is clock only.

[58] Remote Connector

This connector is used to connect the RC-2424 remote control unit. (Do not confuse this connector with the TL-Bus connectors!)

[56} Footswitch

This connector allows the use of a foot switch for Record Punch In/Out. The MX-2424 will sense the polarity of the footswitch when the unit is powered on with the footswitch connected. (Do not hold down the footswitch during power up as this will cause the MX-2424 to incorrectly sense the polarity.) See *MX-2424 Installation* for details on supported types of footswitches.

This connector will also accept input from an Alesis™ LRC for basic transport control.

[59] TL-Bus
These connectors provide communication and sample accurate synchronization between multiple MX-2424's and/or a TL-Sync synchronizer. The total length of all cables connected to the TL-Bus cannot exceed 100 meters. ID numbers must be different for each unit on the TL-Bus. Note that a unit in the middle of the bus can be off and still sending bus communication through its connectors. Units are "daisy-chained" with these connectors from Out to In.

[61] Video Sync In/Thru
The BNC VIDEO SYNC IN connector provides the ability to lock the MX-2424 sample clock to incoming black burst or color bars using NTSC or PAL video signals. The MX-2424 will auto-switch to the appropriate incoming format.

The Video Thru connector passes the video signal fed to the Video Input straight through the MX-2424 so that devices later in an equipment chain can utilize the video signal with no added delay. This connector is self-terminating.

[62] Net
This RJ-45 connector is used for 100Mb Ethernet connection to a personal computer for the ViewNet GUI program and network connections to the MX-2424. Software updates downloaded from the TASCAM web site can be loaded into the MX-2424 from a personal computer via this port. See the *ViewNet Operations Manual* for more detail.

[63] Fast/Wide SCSI Connector
This connector is used for connection of external storage devices to the MX-2424. (Please refer to *SCSI Tips for MX Users* for more detail.)

[57] Word Clock In/Out/Thru
The **Word Clock In** connector allows the MX-2424 to lock to a variety of standard word clock sources. If the MX-2424 is set to read digital clock and it is not present or there is a mismatch in the frequencies, the **Sample Lock [50]** indicator will flash.

The **Word Clock Out** connector always outputs digital clock generated by the MX-2424.

The **Word Clock Thru** connector allows the incoming clock present at the **Word Clock In** connector to pass through the MX-2424 without regeneration. This eliminates the slight delay caused by regenerating the incoming clock. This connector is always active whenever digital clock is present at the **Word Clock In** connector.

[51] Time Code In/Out/Thru:
These are balanced ¼ inch TRS connectors.

The Time Code In connector allows the MX-2424 to synchronize playback to incoming SMPTE and derive digital clock from that time code. The time code coming in on this connection is displayed in the LCD when **<SHIFT> [19]** then **OUT [31] <TC READER>** is pressed on the front panel.

The Time Code Out connector outputs the time code generated by the MX-2424 including any offset when the MX-2424 is in play or record modes.

The Time Code Thru connector will send out reshaped time code that matches the time code coming in on the IN connector. This feature allows the creation of an offset inside the MX-2424 yet passes the time code present at the In connector through to be read by another device.

[60] MIDI In/Out/Thru:
The MIDI In connector will allow the MX-2424 to lock to MIDI time code for chase play and record. The MX-2424 will also respond to standard MIDI machine control messages for play, track arm, record, rewind, fast forward, stop, jog/shuttle and scrub. NOTE: When slaved to incoming MIDI time code it may be necessary to also lock the MX-2424 to the digital clock of the device that is sending the MIDI time code.

The MIDI Out connector will generate MIDI time code that corresponds to the current position of the play head including any offset.

The MIDI Thru connector will pass the MIDI information present on the MIDI In connection through the MX-2424 unaltered.

[64] IEC 3-Prong AC Connector:
This is where the power cord goes.

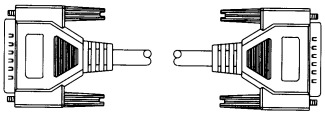
CONNECTING THE MX-2424

Following is a listing/description of cables required to make connections to the MX-2424. Please note that while some cables look similar in appearance they may be wired/constructed very differently. Always use the correct cable!

[53] Analog Multi-Track Connections

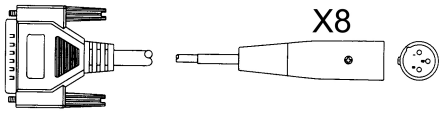
To connect the inputs/outputs of an analog device with balanced DB25 connectors to the analog inputs/outputs of the IF-AN24 if installed in the MX-2424 (NOTE: This is not a TDIF or AES/EBU cable.):

CU/SD103 DB25(M) – DB25(M) 3 Meters
CU/SD105 DB25(M) – DB25(M) 5 Meters
⇒ 8 Channels, input *or* output per cable



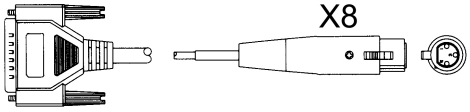
To connect the outputs of the IF-AN24 if installed in the MX-2424 to the inputs of an analog device with XLR connectors:

CU/SD203 DB25(M) – XLR(M) 3 Meters
CU/SD205 DB25(M) – XLR(M) 5 Meters
⇒ 8 Channels per cable



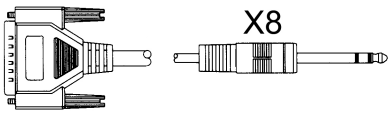
To connect the outputs of an analog device with XLR connectors to the inputs of the IF-AN24 if installed in the MX-2424:

CU/SD303 DB25(F) – XLR(F) 3 Meters
CU/SD303 DB25(F) – XLR(F) 5 Meters
⇒ 8 Channels per cable



To connect the inputs/outputs of an analog device with balanced ¼" TRS connectors to the analog inputs/outputs of the IF-AN24 if installed in the MX-2424:

CU/SD403 DB25(M) – ¼" TRS(M) 3 Meters
CU/SD405 DB25(M) – ¼" TRS(M) 5 Meters
⇒ 8 Channels, input *or* output per cable

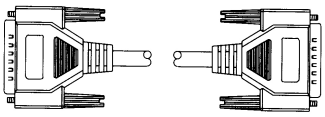


[52] Digital Multi-Track Connections

To connect digitally to another device using TDIF connections when the IF-TD24 is installed in the MX-2424 (NOTE: This is not an AES/EBU or analog cable.):

CU/PW88DS	TDIF Cable	0.5 Meter
CU/PW88D	TDIF Cable	1 Meter
CU/PW88DM	TDIF Cable	3 Meters
CU/PW88DL	TDIF Cable	5 Meters

⇔ 8 Channels, input *and* output per cable



To connect digitally to another device using Adat Optical connections when the IF-AD24 is installed in the MX-2424:

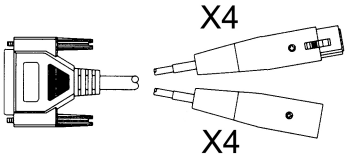
CU/ADOP03	Fiber-Optic Cable	1 Meter
CU/ADOP06	Fiber-Optic Cable	2 Meters
CU/ADOP16	Fiber-Optic Cable	5 Meters

⇒ 8 Channels, input *or* output per cable

To connect digitally to another device using AES/EBU connections when the IF-AE24 is installed in the MX-2424:

CU/AES825 AES/EBU DB25(M) – XLR(M) x 4 and XLR(F) x 4 8 Meters

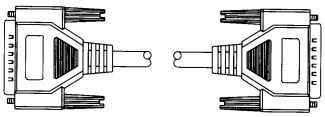
⇔ 8 Channels, input *and* output per cable



CU/AES2503	AES/EBU DB25(M) – AES/EBUDB25(M)	1 Meter
CU/AES2510	AES/EBU DB25(M) – AES/EBUDB25(M)	3 Meters
CU/AES2516	AES/EBU DB25(M) – AES/EBUDB25(M)	5 Meters

(NOTE: This is not a TDIF or analog cable.)

⇔ 8 Channels, input *and* output per cable



[55] AES/EBU Stereo Digital Audio Connections

To connect digitally to another stereo device using AES/EBU (XLR) connections:

CU/AES103	XLR(M) – XLR(F) 110 Ohm	1 Meter
CU/AES110	XLR(M) – XLR(F) 110 Ohm	3 Meters
CU/AES116	XLR(M) – XLR(F) 110 Ohm	5 Meters

[54] SPDIF Connections

To connect digitally to another stereo device using SPDIF (Coaxial) connections:

CU/SPD106	Double-Shield Coax 75 Ohm RCA – RCA	2 Meters
CU/SPD110	Double-Shield Coax 75 Ohm RCA – RCA	3 Meters
CU/SPD113	Double-Shield Coax 75 Ohm RCA – RCA	4 Meters

[58] Remote Connection

This cable comes with the RC-2424.

[56} Footswitch Connection

This cable is already attached to the footswitch or LRC.

[59] TL-Bus Connection

This cable is used to synchronize MX-2424's on the TL-Bus:

CU/TLBUS103	1 Meter
CU/TLBUS106	2 Meters

[61] Video Sync In/Thru Connections

This cable is used to connect to another device to provide video sync to the MX-2424:

CU/BB102	BNC – BNC 75 Ohm RG59	2 Meters
CU/BR202	BNC – RCA 75 Ohm RG59	2 Meters

[62] Net Connection

Category 5 Ethernet cables are used to connect the MX-2424 to a computer running the ViewNet application. When connecting directly to a computer a Crossover Cable is used. When connecting to a computer through an Ethernet hub a Straight Cable is used.

[63] SCSI Connection

Please refer to *SCSI & The MX-2424* for detailed information about SCSI cables.

[57] Word Clock In/Out/Thru Connections

This cable is used to digital word clock connections between other equipment and the MX-2424:

CU/BB102	BNC – BNC 75 Ohm RG59	2 Meters
CU/BR202	BNC – RCA 75 Ohm RG59	2 Meters

[51] Time Code In/Out/Thru Connections

This cable is used for time code connections between other equipment and the MX-2424:

CU/AB202	¼" TRS(M) – ¼" TRS(M)	2 Meters
CU/AB203	¼" TRS(M) – ¼" TRS(M)	3 Meters
CU/AB205	¼" TRS(M) – ¼" TRS(M)	5 Meters

⇔ For time code in/out of the MX-2424.

CU/AB302	XLR(M) – ¼' TRS(M)	2 Meters
CU/AB303	XLR(M) – ¼' TRS(M)	3 Meters
CU/AB305	XLR(M) – ¼' TRS(M)	5 Meters

⇒ For time code output from the MX-2424 to a device with XLR time code connections

CU/AD402	XLR(F) – ¼" TRS(M)	2 Meters
CU/AD403	XLR(F) – ¼" TRS(M)	3 Meters
CU/AD405	XLR(F) – ¼" TRS(M)	5 Meters

⇒ For time code input to the MX-2424 from a device with XLR time code connections

[60] MIDI In/Out/Thru Connections

This cable is used for MIDI connections between the MX-2424 and other equipment.

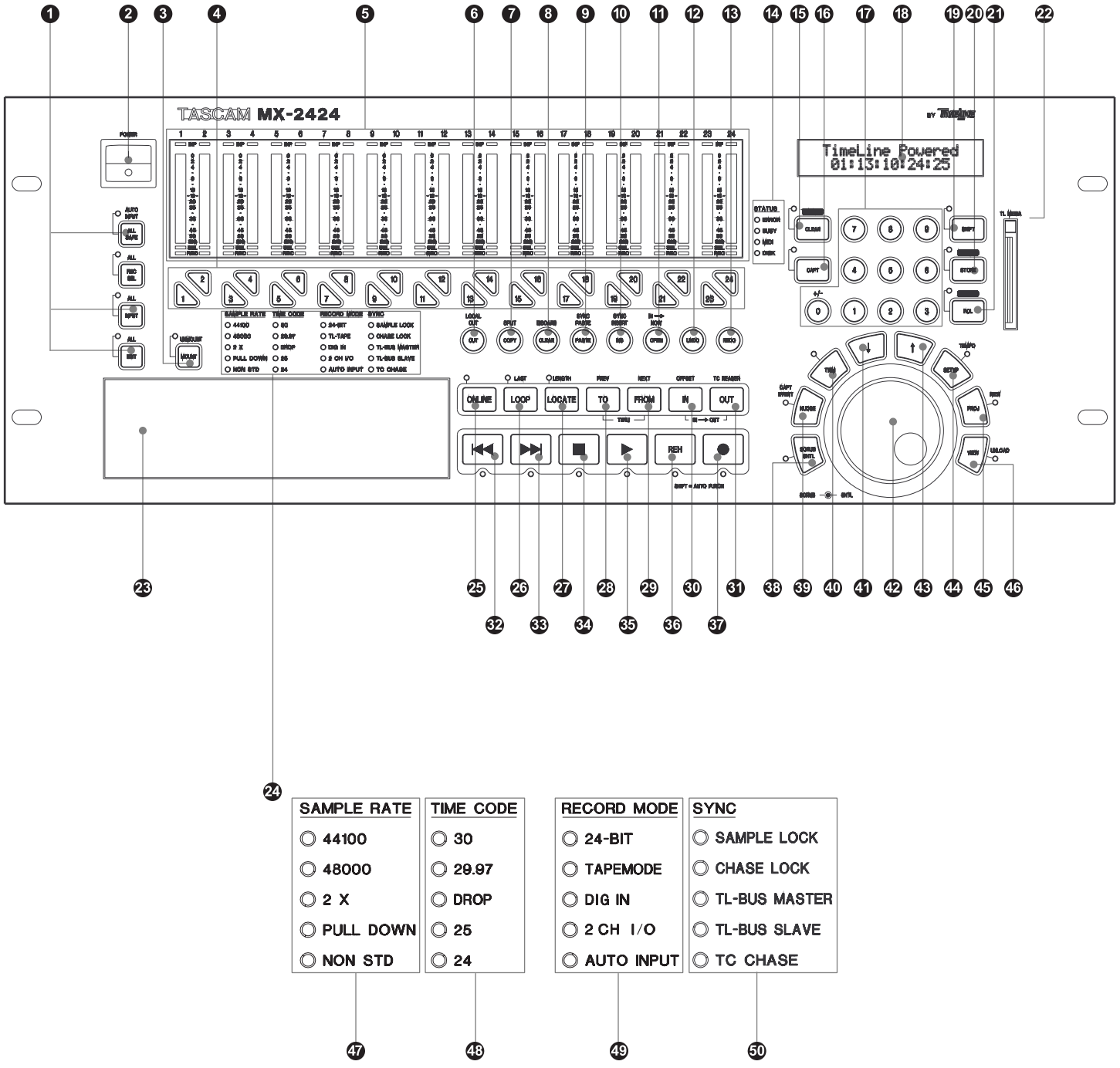
CU/MD201	0.3 Meter
CU/MD203	1 Meter
CU/MD205	1.5 Meters
CU/MD210	3 Meters
CU/MD215	4.5 Meters
CU/MD220	6 Meters
CU/MD225	7.5 Meters

[64] IEC 3-Prong AC Connection

This is where the power cord goes.

CU/PWCD8	MX-2424 to wall outlet power cord This is a standard 3-prong power cord.	2.5 Meters

MX-2424 FRONT PANEL



FRONT PANEL

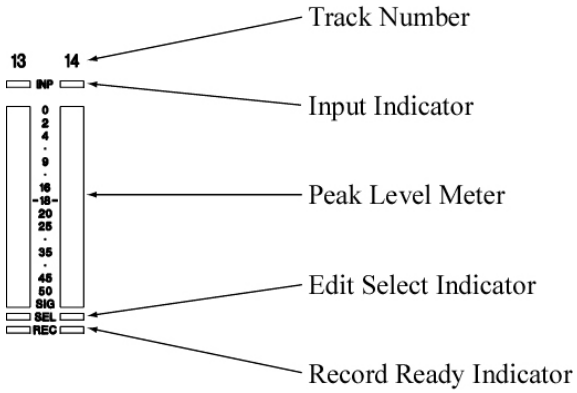
[2] Power Switch
The power switch is located in the top left-hand corner of the unit.

[1] Track Function Keys
These keys determine which function will be applied to the track/tracks when selected by the individual track selection keys.

[3] MOUNT/UNMOUNT
When **MOUNT [3]** is pressed the MX-2424 will attempt to mount all drives attached to the SCSI bus. If there are any devices on the SCSI bus already mounted then un-mounted drives will not be mounted and *"Already Mounted"* will be displayed in the **LCD [18]**. When **<SHIFT> [19]** then **MOUNT<UNMOUNT> [3]** is pressed the MX-2424 will un-mount any devices that are currently mounted on the SCSI bus. If no devices are mounted then *"Already Unmounted"* will be displayed in the **LCD [18]**. (NOTE: These operations are not possible when the transport is running.)

[4] Individual Track Selection Keys (Triangular Keys)
These keys are used to select individual tracks. The function applied to the track(s) is determined by the Track Function Keys **[1]**.

[5] Track Level Meters/Status Indicators



The **Track Number** indicates which audio track the LED's and meter below represent.
The **Input Indicator** will light on any track(s) that are set to Input.
The **Peak Level Meter** will show the input or recorded level of audio on its corresponding track.
The red **Zero Indicator** at the top of the meter will flash when the audio level reaches zero and stay illuminated when three or more consecutive samples show an overload condition. (The overload condition will turn off when the play or record key is pressed.)
The **Edit Select Indicator** will light on any track(s) that are selected for input or editing using the Track Function Keys [1]. Edits are only possible on tracks that have this indicator lit.
The **Record Ready Indicator** will blink on any track(s) that are record-enabled and light solid on any track(s) that are actually recording.

[14] Status Indicators
The **ERROR** indicator and the **CANCEL [15]** indicator will blink when an illegal operation has been attempted or an error condition exists in the MX-2424. An explanation of the error will be displayed in the **LCD [18]**. Press **CANCEL [15]** to clear the **ERROR** indication.
The **BUSY** indicator will light when the MX-2424 is performing an operation and is momentarily busy, such as an edit operation.
The **MIDI** indicator will momentarily light when a MIDI message is sent to the MX-2424 that it can respond to. If the MX-2424 does not respond to the incoming MIDI message then this indicator will not light.
The **DISK** indicator will light when the MX-2424 is writing or reading from any type of SCSI device – inside the chassis, or connected to the external SCSI connector. This includes hard drives, DVD-RAM and tape drives. (NOTE: This indicator is not present on the RC-2424 remote control unit.)

[24] LED Configuration Matrix

[47] Sample Rate LED's (Yellow)

44100: Indicates that the current sample rate frequency is 44.1 kHz.

48000: Indicates that the current sample rate frequency is 48 kHz.

2X: Used in conjunction with the sample rate LED's, indicates that the displayed sample rate is doubled.

PULL DOWN: Used in Conjunction with the other sample rate LEDs, indicates that the displayed sample rate is in pull down mode. (For example: 44.056 kHz or 47.952 kHz)

NON STD: Indicates that a non-standard sample rate is being used such as varispeed. This LED is also used for pull up modes.

[48] Time Code LED's (Yellow)

These LED's indicate the incoming time code frame rate.

[49] Record Mode LED's (Yellow)

24-BIT: Indicates that the MX-2424 will record new audio in 24-bit mode. When the LED is off the MX-2424 will record new audio in 16-bit mode.

TL-TAPE: Indicates that the MX-2424 is in TL-Tape Mode. When this LED is off the MX-2424 is in non-destructive mode.

DIG IN: Indicates that the multi-track digital input is selected as the recording source for at least one group of eight channels, i.e. 1-8, 9-16, and/or 17-24.

2CH I/O: Indicates that the stereo digital I/O is selected as the recording source for at least one group of eight channels, i.e. 1-8, 9-16, and/or 17-24.

AUTO INPUT: Indicates that Auto Input Mode is active. When this mode is active any track set to record ready will automatically switch to playback when the transport is running and recording is not taking place. When this mode is not active it is possible to monitor the input of any track set to record ready while the transport is in motion. (Default is ON.)

[50] Sync LED's (Yellow)

SAMPLE LOCK: This LED will light solid when the MX-2424 is receiving valid sync from the source that is displayed in Menu 003. If source is not present, the LED will blink indicating that the source is unavailable. If the MX-2424 is set to Timecode Chase, this LED will blink until time code is received.

CHASE LOCK: This LED lights solid when the MX-2424 is in stable chase mode.

TL-BUS MASTER: Indicates that the MX-2424 is the Master that can be used to control other MX units via the TL-Bus. The MX-2424 must be online to operate as a Master.

TL-BUS SLAVE: Indicates that the MX-2424 is a slave on the TL-Bus. The MX-2424 must be online to operate as a Slave.

TC CHASE: Indicates the MX-2424 is in time code chase mode using either LTC or MTC as the time code type. The MX-2424 can be TL-Bus Master (controlling other MX-2424 units that are in TL-BUS Slave mode) and be in time code chase mode at the same time. The **ONLINE [25]** indicator must be lit to chase time code.

Edit Keys:
The **EDIT [1]** key is pressed to allow selection of the track(s) to be edited. When a track is selected the green SEL LED is lit for that track. Edits are performed to audio on selected tracks using the In and Out points. (Please refer to *Editing Functions* for more detail)

[6] CUT <LOCAL CUT>
Pressing **CUT [6]** will perform a Cut operation to the selected track(s) between the In and Out points.
Pressing **<SHIFT> [19]** then **CUT<LOCAL CUT> [6]** will perform a Local Cut operation to the selected track(s) between the In and Out points.

[7] COPY <SPLIT>
Pressing **COPY [7]** will perform a Copy operation to the selected tracks(s) between the In and Out points.
Pressing **<SHIFT> [19]** then **COPY<SPLIT> [7]** will perform a Split operation to the selected track(s) at the current position of the Play Head.

[8] CLEAR <DISCARD>
Pressing **CLEAR [8]** will perform a Clear operation to the selected track(s) between the In and Out points.
Pressing **<SHIFT> [19]** then **CLEAR<DISCARD> [8]** will perform a Discard operation to the selected track(s) according to the In and Out points.

[9] PASTE <SYNC PASTE>
Pressing **PASTE [9]** will perform a Paste operation on the selected track(s) at the In point.
Pressing **<SHIFT> [19]** then **PASTE<SYNC PASTE> [9]** will perform a Sync Paste operation on the selected track(s) relative to the position of the Play Head.

[10] INST <SYNC INSERT>
Pressing **INST [10]** will perform an Insert operation on the selected track(s) at the In point.
Pressing **<SHIFT> [19]** then **INST<SYNC INSERT> [10]** will perform a Sync Insert operation on the selected track(s) relative to the position of the Play Head.

[11] OPEN <IN→NOW>
Pressing **OPEN [11]** will perform an Open operation on the selected track(s) according to the In and Out points.
Pressing **<SHIFT> [19]** then **OPEN<IN→NOW> [11]** will perform an In To Now operation on the selected tracks at the location of the Play Head according to the In and Out points.

[12] UNDO
This key reverses the last edit operation. This key will also undo the previous recording pass if the MX-2424 is in non-destructive mode. There are 100 level of undo available. In and Out points will be updated according to the operation that has been undone. (NOTE: Undo is not available in TL-Tape Mode.)

[13] REDO
REDO reverses the last UNDO edit operation. This key will also restore recordings that were undone in Non-Destructive Record. In and Out points will be updated according to the operation that has been redone.

Special Transport Keys:

ONLINE <ALL>

[25] From the MX-2424:
Pressing **ONLINE [25]** so that its LED is lit will enable the MX-2424 to chase an external sync source via TL-Bus, SMPTE or MTC as determined in Menus 000 and 110. Online status must also be selected for an MX-2424 to operate as a master on the TL-Bus. When the transport controls are operated on any MX-2424 that is online it will automatically go offline. Press **ONLINE [25]** again to re-enable online status.

[73] From the RC-2424:
Pressing **ONLINE [73]** so that its LED is lit will activate Online status on the MX-2424 currently selected by the **MACHINE SELECT [72]** keys.
Pressing **<SHIFT> [19]** then **ONLINE<ALL> [73]** will enable Online status for all MX-2424's connected to the RC-2424.

LOOP/LAST/ROLLBACK

[26] From the MX-2424:
Pressing **LOOP [26]** immediately initiates one of three possible types of loop sequences (as determined in Menu 210) relative to the In and Out points. To cancel Loop mode press **STOP [34]**. It is also possible to cancel Loop mode on the fly by pressing **PLAY [35]**. When using Loop Mode in combination with Auto Punch it is possible to cancel the Loop operation on the fly by pressing **REC/REH** or by holding **REC/REH** and pressing **PLAY** (this follows the settings in Menus 202 & 203).

Pressing **<SHIFT> [19]** then **LOOP<LAST> [26]** will perform a Play command from the Last location the MX-2424 went into play or record. The LAST function initiates Play only and does not initiate any kind of loop function.

Pressing **LOOP [26]** plus **LOCATE [27]** sends the MX to the Pre-Roll point before the IN point value.

[74/77] From the RC-2424:
Pressing **LOOP [74]** immediately initiates one of three possible types of loop sequences (as determined in Menu 210) relative to the In and Out points on the MX-2424 currently selected by the **MACHINE SELECT [72]** keys. To cancel Loop mode press **STOP [34]**. It is also possible to cancel Loop mode on the fly by pressing **PLAY [35]**. When using Loop Mode in combination with Auto Punch it is possible to cancel the Loop operation on the fly by pressing **REC/REH** or by holding **REC/REH** and pressing **PLAY** (this follows the settings in Menus 202 & 203).

Pressing **LAST [77]** will perform a Play command from the Last location the MX-2424 currently active on the RC-2424 went into play or record. The **LAST** function initiates the Play function only and does not initiate any kind of loop function.

Pressing **<SHIFT> [19]** then **LAST<ROLLBACK> [74]** will cause the MX-2424's transport currently selected by the **MACHINE SELECT [72]** keys to locate backwards by the amount of time set as the Rollback Length as determined in Menu 260 and stop.

Jump From the MX-2424 and the RC-2424
Holding **STOP [34]** and pressing **FF [33]** or **RW [32]** sends the transport forward or backward using the amount set up in the Rollback memory location. It is possible to repeatedly perform this key combination by holding the **STOP [34]** key and repeatedly pressing the **FF [33]** or **RW [32]**. In this case the locate operation must be completed before the repeat press of **FF [33]** or **RW [32]**.

[27] LOCATE/LENGTH

Pressing **LOCATE [27]** will send the play head to the time code value displayed in the bottom portion of the **LCD [18]**.
Pressing **<SHIFT> [19]** then **LOCATE<LENGTH> [27]** will display the amount of time between the In and Out points.

TO/PREV/REF

[28] From the MX-2424
Pressing **TO [28]** then **IN [30]** will play up to the In point and stop (using the pre-roll amount determined in Menu 212). Pressing **TO [28]** then **OUT [31]** will play up to the out point and stop (using the pre-roll amount determined in Menu 212). In either case the play head will return to the pre-roll position for the IN or OUT point (depending on which one was pressed). If the stored pre or post roll time is less than one second, this operation will still use one second for the value.

Pressing **<SHIFT> [19]** then **TO<PREV> [28]** will locate the Play Head to the beginning of the previous audio event boundary on any track. If a track is in Edit mode then only that track's audio event boundaries will be used by this function.

[67,75] From the RC-2424
Pressing **TO [67]** then **IN [69]** will play up to the In point and stop (using the pre-roll amount determined in Menu 212). Pressing **TO [67]** then **OUT [70]** will play up to the out point and stop (using the pre-roll amount determined in Menu 212). In either case the play head will return to the pre-roll position for the IN or OUT point (depending on which one was pressed). If the stored pre roll time is less than one second, this operation will still use one second for the value.

Pressing **PREV [75]** will locate the Play Head to the beginning of the previous audio event boundary on any track. If a track is in Edit mode then only that track's audio event boundaries will be used by this function.

Pressing **<SHIFT> [19]** then **PREV<REF> [75]** will provide access the Master Machine Reference Sync Point Memory Location. (For more information please see the *TL-Sync* Manual.)

FROM/NEXT/SYNCP

[29] From the MX-2424
Pressing **FROM [29]** then **IN [30]** will play from the In point and stop (using the post-roll amount determined in Menu 213). Pushing **FROM [29]** then **OUT [31]** will play from the out point and stop (using the post-roll amount determined in Menu 213). In either case the play head will return the IN or OUT point plus any pre-roll (depending on which one was pressed). If the stored post roll time is less than one second, this operation will still use one second for the value.
Pressing **<SHIFT> [19]** then **FROM<NEXT> [29]** will locate the Play Head to the beginning of the next audio event boundary on any track. If a track is in Edit mode then only that track's audio event boundaries will be used by this function. When using this function **<SHIFT> [19]** will stay lit allowing additional **NEXT** operations without the need to press **<SHIFT> [19]** again.

[67,75] From the RC-2424
Pressing **FROM [68]** then **IN [69]** will play up from In point and stop (using the post-roll amount determined in Menu 213). Pushing **FROM [68]** then **OUT [70]** will play from the out point and stop (using the post-roll amount determined in Menu 213). In either case the play head will return to the IN or OUT point plus any pre-roll (depending on which one was pressed). If the stored post roll time is less than one second, this operation will still use one second for the value.

Pressing **NEXT [76]** will locate the Play Head to the beginning of the next audio event boundary on any track. If a track is in Edit mode then only that track's audio event boundaries will be used by this function. When using this function **<SHIFT> [19]** will stay lit allowing additional **NEXT** operations without the need to press **<SHIFT> [19]** again.

Pressing **<SHIFT> [19]** then **NEXT<SYNCP> [76]** will provide access the Slave Machine Sync Point Memory Location. (For more information please see the *TL-Sync* Manual.)

IN/OUT

[30, 31] From the MX-2424
Pressing **IN [30]** or **OUT [31]** will cause the MX-2424's Play Head to locate to the In or Out point and stop.

Pressing **CAPT [16]** then **IN [30]** or **OUT [31]** will place the time code location of the Play Head at the time **CAPT [16]** was pressed into the In or Out memory locations. As soon as the capture key is pressed, the time code value is captured and ready to store. **CAPT [16, 71]** may be pressed repeatedly, continually updating the captured value until a target is determined.

If multiple units are on the TL-Bus and an In/Out point is set on any machine on the bus (slave or master), the In/Out point will be updated on all machines that are active on the TL-Bus. Any offsets are taken into account for each machine.

Pressing **STORE [20]** then **IN [30]** or **OUT [31]** will store the time code displayed in the bottom of the LCD into the In or Out memory location.

Pressing **RCL [21]** then **IN [30]** or **OUT [31]** will recall the In or Out memory location into the bottom of the **LCD [18]** for viewing or editing

[69, 70] From the RC-2424
Pressing **IN [69]** or **OUT [70]** will cause the MX-2424's Play Head to locate to the In or Out point and stop.

Pressing **CAPT [16,71]** then **IN [69]** or **OUT [70]** will place the time code location of the Play Head at the time **CAPT [16,71]** was pressed into the In or Out memory locations. As soon as the capture key is pressed, the time code value is captured and ready to store. **CAPT [16, 71]** may be pressed repeatedly, continually updating the captured value until a target is determined.

If multiple units are on the TL-Bus and an In/Out point is set on any machine on the bus (slave or master), the In/Out point will be updated on all machines that are active on the TL-Bus. Any offsets are taken into account for each machine.

Pressing **STORE [20]** then **IN [69]** or **OUT [70]** will store the time code displayed in the bottom of the LCD into the In or Out memory locations.

Pressing **RCL [21]** then **IN [69]** or **OUT [70]** will recall the In or Out memory locations into the bottom of the **LCD [18]** for viewing or editing

SPECIAL KEY COMBINATIONS

Pressing **TO** and **FROM** simultaneously then **IN** or **OUT** will play **THRU** the In or Out point using the pre and post roll values set in Menus 212 & 213.

Pressing **IN** and **OUT** simultaneously will play from the In point and stop at the Out point. (**IN→OUT**)

Pressing **LOOP [26]** plus **LOCATE [27]** sends the MX to the Pre-Roll point before the IN point value.

Press **PLAY [32]** and **REW [35]** simultaneously to play backwards.

These functions are available from the MX-2424 and the RC-2424.

OFFSET/TC READER

[30, 31] From the MX-2424
Pressing **<SHIFT> [19]** then **IN<OFFSET> [30]** will recall the Offset Value into the bottom of the **LCD [18]** for viewing or editing.

There are two internal offset values, one for time code and the other for the TL-Bus. If the **TL-Bus Slave** LED is ON (Menu 110) and the **Online** button is on, then the TL-Bus offset is shown. In all other cases the time code (LTC or MTC) offset is shown. If the MX-2424 is a MASTER on the TL-BUS it will still display the LTC offset since the TL-BUS offset is ignored in this case.

Pressing **<SHIFT>** then **OUT<TC READER> [31]** will display incoming time code in the bottom of the **LCD [18]**.

[78] From the RC-2424
Pressing **OFFSET [78]** will recall the Offset of the MX-2424 currently selected by the **MACHINE SELECT [72]** keys into the bottom of the **LCD [18]** for viewing or editing.

Pressing **<SHIFT>** then **OFFSET <TC READER> [78]** will display incoming time code from the MX-2424 currently selected by the **MACHINE SELECT [72]** keys in the bottom of the **LCD [18]**.

There are two internal offset values, one for time code and the other for the TL-Bus. If the **TL-Bus Slave** LED is ON (Menu 110) and the **Online** button is on, then the TL-Bus offset is shown. In all other cases the LTC offset is shown. If the MX-2424 is a MASTER on the TL-BUS it will still display the LTC offset since the TL-BUS offset is ignored in this case.

MAIN TRANSPORT KEYS:

[32] REWIND/HEAD
One push of the REWIND button sends the MX-2424 into Rewind mode. Two quick pushes sends the play head to the beginning (Head) of the project.

Holding **STOP [34]** and pressing **FF [33]** or **RW [32]** sends the transport forward or backward using the amount set up as the Rollback value. It is possible to repeatedly perform this key combination by holding the **STOP [34]** key and repeatedly pressing the **FF [33]** or **RW [32]**. In this case the locate operation must be completed before the repeat press of **FF [33]** or **RW [32]**.

[33] FAST FORWARD/TAIL
One push of the FAST FORWARD button sends the MX-2424 into Fast Forward mode. Two quick pushes sends the play head to the End (Tail) of the project.

Holding **STOP [34]** and pressing **FF [33]** or **RW [32]** sends the transport forward or backward using the amount set up as the Rollback value. It is possible to repeatedly perform this key combination by holding the **STOP [34]** key and repeatedly pressing the **FF [33]** or **RW [32]**. In this case the locate operation must be completed before the repeat press of **FF [33]** or **RW [32]**.

[34] STOP
The STOP key halts the operation of the transport under all conditions and removes any loop pending mode. It is lit in all stopped conditions.

[35] PLAY
This button puts the MX-2424 into play mode. If Chase is active or the MX-2424 is a slave on the TL-Bus, this play command takes the MX-2424 offline when pressed on the chasing machine. Pressing **PLAY [35]** while recording will punch out of record mode while the transport continues to play.

[36] REH
The **REH [36]** key initiates Rehearsal Mode on those tracks that are armed for recording. The MX-2424 can be set for one-button Rehearse (pressing only the **REH [36]** key initiates Rehearse), or to enter Rehearse only when pressing **PLAY [35]** and **REH [36]** simultaneously (this is the default) as determined in Menu 203. Rehearse mode is used to rehearse a recording by switching to input and back to disk playback. This allows previewing the record process prior to actually recording and is very useful when operating in TapeMode because record Undo is not available in TapeMode.

Auto Rehearse is enabled by pressing **<SHIFT> [19]** then **REH [36]**. The **REH** LED will flash indicating that an Auto Rehearse operation will be performed using the In and Out points when **PLAY [35]** is pressed. Pressing **<SHIFT> [19]** then **REH [36]** again or just pressing **REH [37]** will cancel Auto Rehearse. Auto Rehearse is also possible during Loop. (See *Auto Record/Virtual Tracks* for more details.)

[37] REC
The **REC [37]** key initiates Record Mode on those tracks that are armed for recording. The MX-2424 can be set for one-button Record (pressing only the **REC [37]** key initiates Record), or to enter Record only when pressing **PLAY [35]** and **REC [37]** simultaneously (this is the default) as determined in Menu 202.

Auto Record is enabled by pressing **<SHIFT> [19]** then **REC [37]**. The **REC** LED will flash indicating that an Auto Record operation will be performed using the In and Out points when **PLAY [35]** is pressed. Pressing **<SHIFT> [19]** then **REC [37]** again or just pressing **REC [37]** will cancel Auto Record. Auto Record is also possible during Loop. (See *Advanced Functions* for more details.)

[18] LCD Display:
The liquid crystal display consists of two lines of twenty characters each that show various operator messages depending upon the active panel/display state. Both lines of the LCD can also show various system messages according to the operating state.

When not accessing menus, the top line shows the position of the playhead. The bottom line shows a time code value that can be used for functions such as memory locations, IN/Out points, offsets, etc.

LOCATOR SECTION

[15] CLEAR/CANCEL
This key performs both a clear and a cancel function, operating in almost all modes and situations. **CLEAR [15]** has no shifted function. In Setup, pressing **CLEAR [15]** generally returns a changed value back to the previously stored value, or exits completely. In the Error state pressing **CLEAR [15]** will clear the error message and return the MX-2424 to the previous operating state. During memory location trim or track slip, pressing the **CLEAR [15]** key returns the memory locations to their previous values (before the slip or trim operation changed them). During time code entry in the Normal state, **CLEAR [15]** returns the time code to a zero value. For most other operations, **CLEAR [15]** will return the MX-2424 to the Normal state.

[16, 71] CAPTURE
The capture key places the time code location of the Play Head at the time **CAPT [16, 71]** was pressed into the bottom line of the **LCD [18].** After capturing the time code value the **CAPT [16, 71] LED** will flash until a target key is pressed to determine the memory location to store the value. This action can be done at any time during normal operation of the MX-2424 (including play and record). To complete the capture operation, either press a target key or press **CLEAR [15]** to cancel. **CAPT [16, 71]** may be pressed repeatedly, continually updating the captured value until a target is determined.

[19] SHIFT
Where indicated with text above (or to the side of) a key, **SHIFT [19]** is used to provide an alternate operation for the indicated key. The **SHIFT [19]** key latches when pressed and unlatches after the second key (function key) is pressed (which performs the operation). If held down while pressing the function key then the operation will be immediately performed.
(NOTE: Main operations for any key are indicated by the function printed directly on the key. Any key with an associated LED uses the LED to indicate this main operation. LED's do not indicate shifted operations.)

[20] STORE/YES
This key is used to store locations into memory. Pressing **STORE [20]** then a numeric key sequence (00 through 99) would store the location currently in the lower line of the display into the memory location represented by the numeric key sequence.

The following keys (or key combinations) also represent memory locations that can have values stored into them:
From the MX-2424
[30] IN
[30] <SHIFT>IN<OFFSET>
[31] OUT

From the RC-2424
[69] IN
[70] OUT
[78] OFFSET
[75] <SHIFT>PREV<REF>
[76] <SHIFT>NEXT<SYNCP>

The STORE key also performs the function of "enter" or "confirm" for various operations. In the Setup Menus, pressing the STORE key will answer "yes" to a Verify request. When loading projects or tracks the STORE key initiates the action of loading tracks. There is no shifted function for this key.

[21] RCL/NO
This key is used to recall locations from memory. Pressing **RCL [21]** then a numeric key sequence (00 through 99) would recall the location currently in that memory location into the lower line of the **LCD [18].**

The following keys (or key combinations) also represent memory locations that can have values recalled from them:
From the MX-2424
[30] IN
[30] <SHIFT>IN<OFFSET>
[31] OUT

From the RC-2424
[69] IN
[70] OUT
[78] OFFSET
[75] <SHIFT>PREV<REF>
[76] <SHIFT>NEXT<SYNCP>

The RCL key is also used to provide a NO or CANCEL response to a potentially destructive operation. There is no shifted function for this key.

[17] NUMERIC KEYS
These keys are used to directly enter a time code value into the bottom line of the LCD. When used in combination with the **RCL [21]** and **STORE [20]**, the numeric keys are used to access the various memory locations from 00 through 99. To store a single digit location point zero must be pressed before pressing the number, i.e. 01. In the Setup Menus, these keys directly select menu banks and are used to enter date, time and other numeric data.

Time code values are entered into the active location beginning with the right-hand digit, which moves left as additional digits are entered. Use CLR to reset the active location to zero [00:00:00:00].

Pressing **SHIFT [19]** then **0** toggles the time code number in the lower display between negative and positive. This is one way to store a negative value, to use as an offset for example.

JOG/SCRUB WHEEL AND SURROUNDING KEYS:

[38, 42] SCRUB/SHTL KEY & WHEEL
Pressing the **SCRUB/SHTL [38]** key activates the **SCRUB/SHTL [42]** wheel. The wheel's outer ring is used for Shuttle and the inner wheel is used for audio scrub.

[39] NUDGE/CAPT EVENT
Pressing **NUDGE [39]** moves the audio between the In and Out points using the **UP/DOWN [41/43]** keys or the **SCRUB/SHTL [42]** wheel on tracks that are enabled for editing. Pressing **NUDGE [39]** again will save the operation. This operation will also split the audio at the IN and OUT points if needed. It is possible to press **CLEAR [15]** at any time to cancel the Nudge operation.

Nudge resolution can be set with the **SCRUB/SHTL [42]** ring by moving the cursor under the desired digit. Nudge resolutions are possible in the following increments: 1 Sub-Frame, 10 Sub-Frames, 1 Frame, 10 Frames, 1 Second, 10 Seconds, 1 Minute, Ten Minutes, 1 Hour and 10 Hours. Subframe display must be turned on in Menu 270 to be able to nudge in subframe resolutions.

Pressing **<SHIFT> [19]** then **NUDGE<CAPT EVENT> [39]** with no tracks selected for editing will reference track number one for capturing events that are under the playhead. If more than one track is selected the IN and OUT points will surround the event on the lower numbered track. For example: If tracks 5 & 7 were edit-enabled and the playhead was positioned in events on both tracks, the IN and OUT points would surround the event on track 5. If the Play Head is not located in an audio event on the edit-enabled track, then the In and Out points will not change.

[40] TRIM
Activates a mode in which **SCRUB/SHTL [42]** inner wheel rotation and **UP/DOWN [41/43]** arrow keys change the time code value or Menu setting in the bottom of the **LCD [18]**. The **SCRUB/SHTL [42]** outer ring moves the cursor left or right in the display. Pressing **TRIM [40]** again exits Trim Mode saving changed time code entries while pressing **STORE [20]** is necessary so save Menu settings.

[41, 43] UP AND DOWN
These keys are used to scroll up and down through Setup Menus, change Menu settings, trim time code values and Nudge audio events.

[44] SETUP/TEMPO
This key places the MX-2424 in Setup Mode where Menus for operating parameters can be viewed and adjusted. When Setup is active the **LCD [18]** will display the text for the specific menu item. The **UP/DOWN [41/43]** keys or the **SCRUB/SHTL [42]** inner wheel will scroll through the menu items, then pressing **TRIM [40]** will allow parameter adjustment of that menu item using the **UP/DOWN [41/43]** keys or the **SCRUB/SHTL [42]** inner wheel.

Tempo Maps will be implemented in an upcoming version of MX-OS. Documentation accompanying that version will provide a description of this feature.

[45] PROJECT/NEW
Press **PROJ [45]** to access Project and Track file management functions such as Load, Delete, Rename, Smart Copy and TapeMode Convert. (Please refer to *Disk Operations/Project Functions* for more detail.)

Pressing **<SHIFT> [19]** then **PROJ<NEW> [45]** immediately activates Menu 800 where a new Project may be created by entering a new and unique Project name. If a project is already loaded into the MX-2424 a new project name will automatically be created that is the same as the loaded project with an additional numerical suffix. (NOTE: While this function is not intended for renaming an existing Project it can be used as a "Save As…" function. To rename an existing Project the Rename function under the **PROJ** key must be used.)

[46] VIEW/UNLOAD
Pressing **VIEW [46]** will display for viewing, the contents of the selected track in the **LCD [18]**. The selected track is indicated by a rapidly flashing SEL LED. Different tracks may be selected with the **Individual Track Selection Keys [4],** the **SCRUB/SHTL [42]** inner wheel or the **UP/DOWN ARROW [41,43]** keys.

Pressing **<SHIFT>** then **VIEW<UNLOAD>** will unload the track selected with the **VIEW [46]** key from the physical playback track of the MX-2424. (Please refer to *Advanced Operations* for more detail.)

[23] Front Panel Expansion Bay
This standard size 5 ¼ inch slot will allow the installation of a SCSI device in addition to the included hard drive that is housed inside the MX-2424. (See *Option Installation* for more details.)

[22] TL Media Slot:
This slot is used when updating/archiving the version of MX-OS running in the MX-2424. (See *MX-OS Operations* for details.)

RC-2424 SPECIFIC FUNCTIONS

[66] MACRO KEYS

These keys allow key sequences of up to 99 strokes to be stored and recalled by a single key.
To use this function press and hold one of the eight **MACRO KEYS [66]** for one second, *Function Key Record* will be temporarily displayed in the **LCD [18]**. All subsequent key strokes will be stored in that Macro Location.
To close Macro recording press the same Macro Key again and *Function Key Close* will temporarily be displayed ending the recording of key strokes.
To play back a Macro simply press the Macro key where the desired key sequence is stored.

Go to *http://www.tascam.com* to download a collection of useful macro files.

(NOTE: Macro keys are used for setup and editing functions. They do not store key strokes with timing information and should not be used for punching or other timing-critical operations.)

[72] MACHINE SELECT/RECORD STATUS

When a **MACHINE SELECT KEY** is pressed, the corresponding machine of a multi-machine configuration will become the active machine on the RC-2424 making it possible to change settings on that machine. Possible selections are **1 – 6**. The yellow LED above the Machine Select Keys will light to indicate the currently selected machine. The red LED will blink when any track on that machine is armed for recording and light solid when actually recording. For example it is possible to have a track armed for recording on machine #3 with its red LED blinking and control the transport with machine #1 as the active machine on the RC-2424 with its yellow LED lit. Only one MX-2424 can be viewed with its yellow LED lit on the RC-2424 at a time.

When the **TL SYNC** button is pressed is becomes possible to adjust the parameters of the *TASCAM TL-Sync* synchronizer. A *TL-Sync* must be connected and active on the TL-Bus for this button to have any effect. (For more detail please refer to the *TL-Sync* operations manual.)

Pressing **MAST** immediately makes the Master machine connected to the TL-Bus the active machine on the RC-2424. This Master machine could be an MX-2424 or a *TL-Sync*. Pressing **<SHIFT><MAST>** makes the currently active machine on the RC-2424 the Master machine.

[58] REMOTE

The cable to connect the RC-2424 to the TL-Bus goes here. Total remote bus length including all cabling is 100 meters.

[65] TL-SYNC

These LED indicators are reserved for use with the *TL-Sync*. Please refer to the *TL-Sync* operations manual for more detail.

BACKUP/RESTORE PROCEDURES

The MX-2424 incorporates an advanced backup software called Smart Copy. This system is a smart back up similar to computer-based backup software. Smart Copy operates on one project at a time, supports disk-spanning on DVD-RAM media and only backs up files that have been added or changed since the last backup.

To Back Up a Project to DVD-RAM

1. Be sure all SCSI devices are properly connected.
2. Press SHIFT then UNMOUNT to un-mount all drives.
3. Open the DVD-RAM drive tray, insert a blank disk and close the tray. Do not attempt to remove the actual disk from its plastic carrier.
4. Press MOUNT to mount all drives. It will not be possible to open the DVD-RAM drive tray again until it is un-mounted.
5. Press PROJ, then use the UP/DOWN Arrow keys until *Smart Copy* is displayed in the LCD. Press PROJ again or YES.
6. Available Project names will be displayed in the LCD. Use the UP/DOWN Arrow keys to select the source project to be backed up then press YES. (SCSI ID location of the project will be indicated in brackets. If the project title is so long that the brackets are not displayed it is possible to turn the SHTL Ring to the right to scroll the display until the brackets can be seen.)
7. *"Smart Copy to:"* will be displayed in the LCD prompting for a SCSI ID of the DVD-RAM drive. Press TRIM and use the UP/DOWN Arrow keys to select the SCSI ID of the destination drive. Press YES.
8. *"Smart Copy as:"* will be displayed in the LCD prompting for a new project name (if desired). Press YES to accept the current project name or press TRIM to change it. Confirm your selection.
9. *"EraseTape? No=Append"* will be displayed in the LCD. **Press YES to completely erase the currently mounted DVD-RAM disk and begin a new backup. Press NO to add to an existing backup. <u>There is no Undo for this function.</u>**
10. If the disk gets filled up during the backup the MX-2424 will prompt for a new disk to be inserted. If currently copying to side A, the disk may be turned over to side B. If currently copying to side B it will be necessary to insert a new disk.
11. The status of the backup will be displayed in the LCD until it is completed. When completed, press SHIFT then UNMOUNT to remove the DVD-RAM disk.

To Restore a Project from DVD-RAM

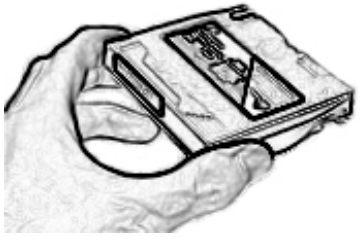
1. Be sure all SCSI devices are properly connected.
2. Press SHIFT then UNMOUNT to un-mount all drives.
3. Open the DVD-RAM drive tray, insert the disk containing the project to be restored and close the tray.
4. Press MOUNT to mount all drives. It will not be possible to open the DVD-RAM drive tray again until it is un-mounted.
5. Press PROJ, then use the UP/DOWN Arrow keys until *Smart Copy* is displayed in the LCD. Press PROJ again or YES.
6. Available Project names will be displayed in the LCD. Use the UP/DOWN Arrow keys to select the source project to be restored then press YES. Projects located on the DVD-RAM disk will be indicated by *"BU"* displayed in brackets along with the SCSI ID of the DVD drive. If the project title is so long that the brackets are not displayed it is possible to turn the SHTL Ring to the right to scroll the display until the brackets can be seen.
7. *"Smart Copy to:"* will be displayed in the LCD prompting for a SCSI ID of the destination hard drive. Press TRIM and use the UP/DOWN Arrow keys to select the SCSI ID of the destination drive. Press YES.
8. *"Smart Copy as:"* will be displayed in the LCD prompting for a new project name (if desired). Press YES to accept the current project name or press TRIM to change it. Confirm you selection.
9. If restoring from a backup that spans disks the MX-2424 will prompt for the next disk when it is needed.
10. The status of the restore will be displayed in the LCD until it is completed. When completed, press SHIFT then UNMOUNT to remove the DVD-RAM disk.

<u>SPECIAL NOTES ABOUT DVD-RAM</u>

- Each side of a DVD-RAM disk is treated by the MX-2424 as a separate disk.
- When an un-initialized DVD-RAM disk is used the MX-2424 will employ its Smart Backup system to span project(s) across multiple disks.
- When a DVD-RAM disk is used that has been initialized on a Mac it will be treated by the MX-2424 as another hard drive and disk spanning will not be possible.
- When a backup set contains more than one DVD-RAM disk the MX-2424 will prompt in the LCD to insert the appropriate disk then press YES.

- To Back Up a Project to Travan Tape

1. Be sure all SCSI devices are properly connected.
2. Press SHIFT then UNMOUNT to un-mount all drives.
3. Insert a blank tape into the Travan drive. The tape will stick out of the drive about one inch. Always grasp the tape by the sides as shown below.



4. Press MOUNT to mount all drives. This may take a few minutes. Do not attempt to remove the Travan tape while it is mounted or in motion.
5. Press PROJ, then use the UP/DOWN Arrow keys until *Smart Copy* is displayed in the LCD. Press PROJ again or YES.
6. Available Project names will be displayed in the LCD. Use the UP/DOWN Arrow keys to select the source project to be backed up then press YES. (SCSI ID location of the project will be indicated in brackets. If the project title is so long that the brackets are not displayed it is possible to turn the SHTL Ring to the right to scroll the display until the brackets can be seen.)
7. *"Smart Copy to:"* will be displayed in the LCD prompting for a SCSI ID of the Travan drive. Press TRIM and use the UP/DOWN Arrow keys to select the SCSI ID of the destination drive. Press YES.
8. *"Smart Copy as:"* will be displayed in the LCD prompting for a new project name (if desired). Press YES to accept the current project name or press TRIM to change it. Confirm your selection.
9. *"EraseTape? No=Append"* will be displayed in the LCD. **Press YES to completely erase the currently mounted Travan tape and begin a new backup. Press NO to add to an existing backup. <u>There is no Undo for this function.</u>**
10. The status of the backup will be displayed in the LCD until it is completed. (NOTE: If projects already exist on the tape the backup process will begin after the tape's directory information has been loaded into the MX-2424's memory, this may take a few minutes. When completed, press SHIFT then UNMOUNT to remove the Travan tape.)

<u>To Restore a Project from Travan Tape</u>

1. Be sure all SCSI devices are properly connected.
2. Press SHIFT then UNMOUNT to un-mount all drives.
3. Insert the tape into the Travan drive that contains the project to be restored.
4. Press MOUNT to mount all drives. This may take a few minutes. Do not attempt to remove the Travan tape while it is mounted or in motion.
5. Press PROJ, then use the UP/DOWN Arrow keys until *Smart Copy* is displayed in the LCD. Press PROJ again or YES.
6. Available Project names will be displayed in the LCD. Use the UP/DOWN Arrow keys to select the source project to be restored the press YES. Projects located on the Travan tape will be indicated by *"BU"* displayed in brackets along with the SCSI ID of the device where the project is located. If the project title is so long that the brackets are not displayed it is possible to turn the SHTL Ring to the right to scroll the display until the brackets can be seen.
7. *"Smart Copy to:"* will be displayed in the LCD prompting for a SCSI ID of the destination hard drive. Press TRIM and use the UP/DOWN Arrow keys to select the SCSI ID of the destination drive. Press YES.
8. *"Smart Copy as:"* will be displayed in the LCD prompting for a new project name (if desired). Press YES to accept the current project name or press TRIM to change it. Confirm your selection.
9. The status of the restore will be displayed in the LCD until it is completed. When completed press SHIFT then UNMOUNT to remove the tape.

<u>SPECIAL NOTES ABOUT TRAVAN</u>

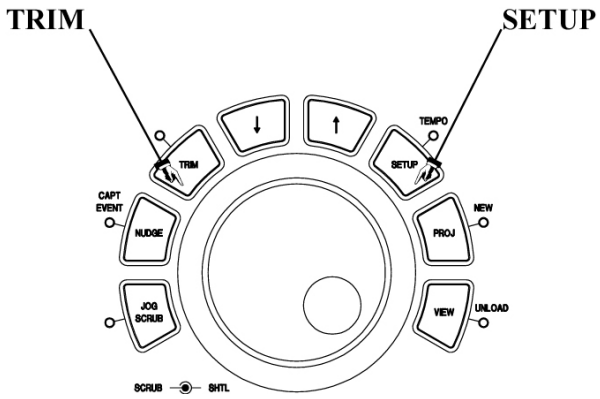
- Tape spanning will be supported in a future release of MX-OS. Currently if a project backup will require more space than is available on a tape then a new tape must be used.
- Currently maximum backup capacity to Travan is 10 gigabytes.
- Only Travan tapes that specify 10 gigabytes uncompressed may be used by the MX-2424.

MENU OPERATIONS
MX-2424 SETUP & CONFIGURATION

NAVIGATING THE MX-2424'S MENU STRUCTURE:

The menus on the MX-2424 are grouped into ten Menu Banks. The Menu Banks are organized so that related setup menus are in the same Menu Bank. The Menu Banks are as follows:

000 *Rates & References*
100 *Bus Controls*
200 *System Controls*
300 *MIDI*
400 *Input/Output*
500 *Audio Controls*
700 *Disk*
800 *Project*
900 *System*



From the MX-2424 & RC-2424

To access the setup and configuration menus press **SETUP [44]**, its LED will light. Then Menu Banks can be accessed directly by pressing the number of the desired Menu Bank (0-9). Individual Menus can be accessed by using the **SCRUB** wheel or the **Up/Down [41,43]** arrow keys just above the **SCRUB** wheel. Press **SETUP [44]** again to return to normal time code display, the **SETUP** LED will turn off.

To change the value or setting of a Menu, press **TRIM [40]** with the desired Menu displayed in the LCD. The **TRIM** LED will light. Then use the **SCRUB** wheel or the **UP/DOWN [41, 43]** arrow keys just above the **SCRUB** wheel to select the new setting. Use the **SHUTTLE** ring to move the cursor left or right if applicable. Press **STORE/YES [20]** to confirm the new setting. If the **STORE/YES** LED is not blinking then the setting has not been changed or a new setting has been confirmed. Press **TRIM [40]** again or **RCL/NO** to select another Menu without saving any changes, the **TRIM** LED will turn off. (NOTE: Menus 006 {Varispeed} and 920 {LED Brightness} are the only exceptions. Pressing TRIM when a value has been adjusted saves the new setting in these menus.) Then press **SETUP [44]** to return to normal time code display. At any time **CLEAR [15]** may be pressed to exit completely out of the Menu system back to normal time code display.

THE MX-2424 MENUS AND WHAT THEY DO:

Menu Bank 000: Rates & References

000 Control Mode

This menu selects the time reference used by the MX-2424 and enables Varispeed operation. (NOTE: It is not possible to have Varispeed enabled while chasing SMPTE, MTC or another MX-2424 on the TL-Bus. Only a master machine can have Varispeed enabled.)

Local/TL-Bus Select this if the MX-2424 is operating on the TL-Bus as a Master/Slave, if it is sending SMPTE or MTC to another device or if it is operating alone. (This is the default setting.)

Timecode Chase Select this to have the MX-2424 chase to SMPTE being generated from another device. If Menu 002 Sample Reference is set to automatic then digital clock will be derived from the incoming time code.

MTC Chase Select this to have the MX-2424 chase to MIDI Time Code being generated from another device.

The MX-2424 does not produce digital clock from MIDI time code (MTC) like it does from longitudinal time code (LTC) such as SMPTE time code. If you have an audio device that is sending MTC to the MX-2424 and you want to ensure that the two units stay in sync, it is recommended that you lock the MX-2424 sample reference clock to the device generating the MTC. This is done by making a word clock connection from the device generating MTC to the MX-2424 and selecting *External Wordclock* in Menu 002.

Varispeed Select this to enable Varispeed operation. Varispeed amount is possible in 0.1% increments within a +/- 12.5% range. This range is set in Menu 006 and varies according to the sample rate selected. Varispeed varies the playback frequency as well as any digital sample clock output from the MX-2424. Varispeed operation is indicated by the **NON-STD** LED on the front panel. (NOTE: If the MX-2424 is connected digitally to a digital console it may be possible to select a Varispeed amount that is out of the acceptable range of the console and the console will mute. If this occurs it will be necessary to reduce the Varispeed amount or connect the MX-2424 to the console using analog connections.)

001 Frame Reference

This menu enables the MX-2424 to use house video sync such as blackburst, composite sync or color bars for resolve to the edge of the video frame. Both NTSC and PAL formats can be accepted by the MX-2424. The MX-2424 will automatically switch to the appropriate frame rate to match the incoming video sync format.

002 Sample Reference

The setting of this Menu determines the digital clock source for the MX-2424. This needs to be determined whenever the MX-2424 is digitally connected to another piece of digital equipment.

Automatic — This will set the MX-2424 to internal clock as long as the Frame Reference is not set to video in Menu 001, in which case the sample clock will lock to video. If the Frame Reference is set to Video in Menu 001 and the Sample Reference is not set to *Automatic*, then the MX-2424 assumes that these two references are externally resolved.

If the MX-2424 is set to be a slave on the TL-BUS then the sample clock switches to "TL-BUS". If the MX-2424 is set to time code chase mode then the sample clock switches to "Timecode In". This is displayed in Menu 003.

Ext Wordclock — This setting is used when the MX-2424 is required to lock to a word clock signal connected to the **WORD CLOCK IN** connector on the rear panel. The **WORD CLOCK THRU** connector would be used if this word clock signal needs to be passed through the MX-2424 to another piece of digital equipment without added delay.

Dig In 1,2
Dig In 9,10
Dig In 17,18 — One of these settings would be used if the MX-2424 is required to lock to the digital signal present at one of the three digital connectors on an installed multi-track digital I/O module **[52]**. For example: If transferring digitally from a TASCAM DA-78HR to tracks 9-16 of the MX-2424 this Menu would be set to Dig In 9,10. (NOTE: With this setting the digital clock is taken from the first two inputs of one of the three eight channel blocks: 1&2, 9&10 or 17&18.)

2CH In — This setting is used when transferring digital audio into the MX-2424 through the stereo AES/EBU inputs **[55]** or the SPDIF inputs **[54]**. This setting may also be used if AES/EBU or SPDIF null clock is to be used by the MX-2424 as its digital clock source. Menu 462 *2CH In Source* is used to choose either AES/EBU or SPDIF.

003 Samp Ref Status

This is a detailed display indication only of the current source of digital clock. It is not possible to make changes to any setting from this menu. The possible sources of digital clock are:

Internal — Displayed when the MX-2424 is acting as the digital clock master to any other piece of digital equipment. The other equipment could be another MX-2424 on the TL-Bus or any equipment connected digitally to the MX-2424 or to its **WORD CLOCK OUT** connector **[57]**.

TL-Bus — Displayed when the MX-2424 is chasing another MX-2424 on the TL-Bus.

Ext Wordclock — Displayed when the MX-2424 is locked to a digital word clock signal present at the **WORD CLOCK IN** connector **[57]** as selected in Menu 002 above.

Dig In 1,2
Dig In 9,10
Dig In 17,18 — One of these settings would be displayed when the MX-2424 is locked to a digital signal present at one of the three connectors on the multi-track digital I/O module **[52]** as selected in Menu 002 above.

2CH In — Displayed when the MX-2424 is locked to a digital signal present at either the stereo **AES/EBU [55]** or the **SPDIF [54]** connector on the rear panel as selected in Menu 002 above.

Timecode In — Displayed when the MX-2424 is receiving SMPTE time code present at the **TIME CODE IN** connector **[51]** on the rear panel, *Timecode Chase* is selected in Menu 000 and *Internal/Frame* is selected in Menu 002.

Video — Displayed when the MX-2424's digital clock is locked to a valid external video sync source. The MX-2424 will automatically switch between NTSC and PAL video formats.

004 Timecode Type

From this Menu it is possible to change the frame rate of the time code that is output from the MX-2424. (NOTE: It is not possible for the MX-2424 to chase one frame rate and simultaneously output a different frame rate.) The possible choices are:

24/24	
25/25	PAL Default (Europe)
29.97/DF	
29.97/NDF	NTSC Default (USA)
30/DF	
30/NDF	Non-Video Default

(NOTE: The MX-2424 will automatically switch to the correct frame rate between 24, 25 and 30 frames per second but will not automatically switch between variations of 30 frames per second such as 29.97/DF, 29.97/NDF, 30/DF or 30/NDF. These settings will have to be selected manually, this allows maximum flexibility in certain post production situations.)

When chasing MTC the MX-2424 will not automatically switch to match the incoming MTC. In this case it will be necessary to manually select the time code type and lock the MX-2424's digital clock to the device generating MTC to avoid drift since the MX-2424 will not derive digital clock from incoming MTC.

005 Sample Rate

From this Menu it is possible to change the playback sample rate of a Project. (NOTE: It is possible to change the playback sample rate of a Project to a rate that does not match the original sample rate of the audio file resulting in a playback speed that does not match the original recording.) The possible choices including pull up and pull down for post-production applications are:

44056	44.1	Pull Down	
44100		Standard	(This is the default setting.)
44144	44.1	Pull Up	
47952	48	Pull Dow	
48000		Standard	
48048	48	Pull Up	

006 Varispeed Rate

From this Menu the amount of Varispeed (playback speed/pitch) can be adjusted in 0.1% increments within a range of +/-12.5%. Varispeed varies the playback frequency as well as any digital sample clock output from the MX-2424. (NOTE: If the MX-2424 is connected digitally to a digital console it may be possible to select a Varispeed amount that is out of the acceptable range of the console and the console will mute. If this occurs it will be necessary to reduce the Varispeed amount or connect the MX-2424 to the console using analog connections.)

Menu Bank 100: Bus Controls

110 TL Bus Request

This Menu assigns the MX-2424 to Master or Slave operation on the TL-Bus.

Off — The MX-2424 will operate independently of any other equipment connected on the TL-Bus. (This is the default setting.)

Slave — The MX-2424 will chase to another MX-2424 connected on the TL-Bus which is set to be a Master. An MX-2424 set to Master must exist on the TL-Bus to allow an MX-2424 to be set to Slave.

Master — The MX-2424 will control other MX-2424's connected on the TL-Bus by providing both word clock and timing reference over the TL-Bus connection **[59]**. Only one Master can be designated at a time on one TL-Bus.

111 Ident Request

This menu chooses manual or automatic selection of machine ID (1-32) for any MX-2424 connected on the TL-Bus.

Auto Assign — When connected on the TL-Bus the MX-2424 will automatically assign itself to the next available machine ID. (This is the default setting.)

01 – 32 — It is possible to manually assign an MX-2424 a machine ID from 1 to 32 over-riding any automatic ID assignment. (NOTE: This would be done if it is desired to have multiple MX-2424's appear in a different order on the RC-2424. The lowest ID number would be machine #1 on the RC-2424.)

112 Ident Assigned

This is a detailed display indication only of the assigned machine ID. It is not possible to make changes to any setting from this menu. The machine ID currently assigned is also displayed in the normal operating state of the **LCD [18]**.

Menu Bank 200: System Controls

200 Record Mode

This menu selects either Non-Destructive recording mode or TL-Tape Mode.

Non-Destructive — This recording mode allows recordings to be undone with the **UNDO** key **[12]**. This is accomplished by creating a new audio file each time a recording is performed with the most recent recording active in OpenTL. When an Undo or Redo command is executed the individual audio files remain intact with only the OpenTL Project file being updated. (This is the default setting.)

NOTE: All recordings performed as "rolling punches" (punching out then back in without stopping the transport) during a single pass will be undone by the Undo function. If it is necessary to have separate Undo's available for each punch, then each punch will have to be done in its own pass. After performing multiple punches in a single pass it is also possible to delete single audio events using ViewNet or the Capture Event function on the front panel.

TL-Tape Mode This recording mode allows the MX-2424 to record just like a traditional tape machine creating seamless audio events per track. Any recording performed directly overwrites the previous audio. THERE IS NO UNDO AVAILABLE WHEN RECORDING IN TL-TAPE MODE. TL-Tape mode is useful for people who are familiar with tape recorders and wish to continue working in that fashion. Other uses for TL-Tape mode include creating single time-stamped audio files per track for importing into other digital audio workstations or simply for conserving disk space on the MX-2424 since TL-Tape Mode creates only one audio file per track.

202 Record Key

This Menu allows one-button (**REC**) or two-button (**REC**+**PLAY**) punch modes to be selected.

Record+Play In this mode **PLAY [35]** must be held down and **REC [37]** pressed exactly when it is desired to enter recording mode. To punch out press **PLAY [35]** alone. (This is the default setting.)

Record In this mode **REC [37]** alone is used to punch in to recording mode. To punch out, press **PLAY [35]** alone.

203 Rehearse Key

This Menu allows one-button (**REH**) or two-button (**REH**+**PLAY**) rehearse modes to be selected. Rehearse mode will switch any track that is record-enabled to input for monitoring new audio without recording it.

Rehearse+Play In this mode **PLAY [35]** must be held down and **REH [37]** pressed exactly when it is desired to enter rehearse mode. To punch out press the **PLAY [35]** alone. (This is the default setting.)

Rehearse In this mode **REH [37]** alone is used to punch in to rehearse mode. To punch out press **PLAY [35]** alone.

204 Capt React Time

The setting of this menu will allow back-timing of captured values to compensate for consistently late captures which may vary from person to person. This value may be set in one frame increments from 0 – 255 frames. (Default setting is 0.)

210 Loop Mode

This Menu determines how the MX-2424's transport will function when **LOOP [26]** is pressed. If Auto Record/Rehearse is enabled (**SHIFT** + **REC** or **SHIFT** + **REH**) this operation will also be performed within the selected Loop Mode. Pressing the LOOP key immediately engages the transport and any pending Auto Punch operation.

(NOTE: The MX-2424 will not loop over "midnight" {time code location 00:00:00:00}. If it is necessary to use 00:00:00:00 as the In point of a Loop operation then the pre-roll will have to be set to zero and audition key commands relative to the In point will not be possible.)

Play Repeatedly This setting will cause the MX-2424 to play from the In point (with Pre-Roll) through the Out point (with Post-Roll) repeatedly until **STOP [34]** is pressed. (This is the default setting.)

Play Once & Cue This setting will cause the MX-2424 to play from the In point (with Pre-Roll) through the Out point (with Post-Roll), then locate back to the In point (with Pre-Roll) and stop, disengaging **LOOP**.

Play Once & Stop This setting will cause the MX-2424 to play from the In point (with Pre-Roll) through the Out point (with Post-Roll) and stop, disengaging **LOOP**.

211 Loop Record

This Menu allows automatic creation of virtual tracks when a record operation is performed. **STOP [34]** can be pressed at any time to immediately cancel any recording or Loop operation. (Default setting is OFF.)

Auto Unload On/Off This setting will create a new virtual track each time a record operation is performed. Each new track created will maintain the same track name while increasing the track's numerical extension one number for each new recording. This is done by unloading the track last recorded on before recording a new one. Once a physical is unloaded it becomes a virtual track and can then be loaded into any physical track on the MX-2424. (NOTE: If using this function in Non-Destructive Record Mode all audio events on a track will be unloaded along with the newly recorded section before recording the new track. In this case it will be necessary to load the original track along with all the virtual tracks for comparison/editing when virtual tracking is completed.) Please refer to *Advanced Functions* for more detail.

(NOTE: The Record w/Unload function only works when used with Auto Record and Loop Mode together. This function does not work with Auto Record alone or manual punching.) See *Advanced Functions* for more detail.

212 Pre-Roll

With this Menu it is possible to adjust the amount of Pre-Roll applied during a Loop or edit preview operation up to the In Point. Pre-Roll can be set in one-frame increments. (Default is 3 seconds.)

213 Post-Roll

With this Menu it is possible to adjust the amount of Post-Roll applied during a Loop or edit preview operation after the Out Point. Post-Roll can be set in one-frame increments. (Default is 2 seconds.)

230 TapeMode Start

When recording all audio files are time-stamped for import into other digital audio workstations. With this Menu it is possible to set the beginning time code value for time-stamping of audio files recorded in TapeMode. TapeMode Start can be set in one-frame increments from 00:00:00:00 to 23:59:59:29. (Default is 01:00:00:00)

231 TapeMode Length

When recording in TL-Tape mode it is necessary to allocate enough hard drive space to record the desired audio. With this Menu it is possible set the amount of drive space allocated for a Project in TL-Tape Mode. (NOTE: It is possible to record longer than what has been set in this Menu, however the recording must begin before the end of the set TapeMode Length. If it is required to punch into a track after the end of the set TapeMode Length then the TapeMode Length must be extended before performing the punch in.)

TapeMode Length can be set in one-frame increments from 00:00:00:00 to 23:59:59:29. (Default is 00:10:00:00)

260 Rollback Length

When rollback is activated the MX-2424's transport will locate backwards by the amount of time set as the Rollback Length and stop. Rollback Length can be set in one-frame increments from 00:00:00:00 to 23:59:59:29. (Default is 00:00:10:00)

Rollback can be activated directly on the RC-2424 remote control unit by pressing **<SHIFT> [19]** then **LAST<ROLLBACK> [77]**.

A play head Jump can be activated on either the RC-2424 or the front panel of the MX-2424 by holding **STOP [34]** and pressing either **FAST FORWARD [33]** or **REWIND [32]** to send you forward or backward using the amount set up as the Rollback value.

270 Display Subframe

With this Menu it is possible to toggle on or off the display of subframes in the LCD time display. A subframe is $1/100^{th}$ of a frame. When toggled on it is possible to Trim Memory locations and Edit Points with subframe accuracy. Points are always captured with subframe accuracy by pressing **CAPT [16]** even when subframe display is turned off. (Default is Off.)

Menu Bank 300: MIDI

300 MIDI Device ID

This Menu allows the MIDI Device ID of the MX-2424 to be set. It may become necessary to change this when the MX-2424 is sharing the same MIDI Device ID as other equipment in a MIDI setup. (Default is 74)

Menu Bank 400: Input/Output

400 Inputs 1 – 8 /48k

This Menu allows selection of input source for the first block of eight channels. The "/48k" designates the setup is for recording at 44.1kHz, 48kHz and their associated pull up/down sample rates. When the 96kHz recording software update is available menu choices will display options for 96kHz recording. Possible choices are:

Analog	When selected, input to tracks 1 – 8 is taken from inputs 1 – 8 of the analog I/O module (IF-AN24) if installed.
Dig In	When selected, input to tracks 1 – 8 is taken from inputs 1 – 8 of a digital I/O module (IF-AE24, IF-AD24 or IF-TD24) if installed.
2CH In	When selected, the dedicated stereo digital inputs are routed to channels 1 – 8 with the Left signal going to the Odd tracks (1,3,5,7) and the Right signal going to the Even tracks (2,4,6,8). It is then possible to record enable the desired Odd/Even pair of tracks for stereo recording. (NOTE: When using this option it will be necessary to choose between AES/EBU and SPDIF in Menu 462. and select *2CH In* in Menu 002.)

401 Inputs 9 – 16 /48k

This Menu allows selection of input source for the second block of eight channels. Possible choices are:

Analog When selected, input to tracks 9 – 16 is taken from inputs 9 – 16 of the analog I/O module (IF-AN24) if installed.

Dig In When selected, input to tracks 9 – 16 is taken from inputs 9 – 16 of a digital I/O module (IF-AE24, IF-AD24 or IF-TD24) if installed.

2CH In When selected, the stereo digital inputs are routed to channels 9 – 16 with the Left signal going to the Odd tracks (9,11,13,15) and the Right signal going to the Even tracks (10,12,14,16). It is then possible to record enable the desired Odd/Even pair of tracks for stereo recording. (NOTE: When using this option it will be necessary to choose between AES/EBU and SPDIF in Menu 462. and select *2CH In* in Menu 002.)

Analog 1 – 8 When selected, input to tracks 9 – 16 is taken from inputs 1 – 8 of the analog I/O module (IF-AN24) if installed. This is useful if the MX-2424 is connected to an analog mixer with 8 busses.

Dig In 1 – 8 When selected, input to tracks 9 – 16 is taken from inputs 1 – 8 of a digital I/O module (IF-AE24, IF-AD24 or IF-TD24) if installed. This is useful if the MX-2424 is connected to a digital mixer with 8 busses.

402 Inputs 17 – 24 /48k

This Menu allows selection of input source for the third block of eight channels. Possible choices are:

Analog When selected, input to tracks 17 – 24 is taken from inputs 17 – 24 of the analog I/O module (IF-AN24) if installed.

Dig In When selected, input to tracks 17 – 24 is taken from inputs 17 – 24 of a digital I/O module (IF-AE24, IF-AD24 or IF-TD24) if installed.

2CH In When selected, the stereo digital inputs are routed to channels 17 – 24 with the Left signal going to the Odd tracks (17,19,21,23) and the Right signal going to the Even tracks (18,20,22,24). It is then possible to record enable the desired Odd/Even pair of tracks for stereo recording. (NOTE: When using this option it will be necessary to choose between AES/EBU and SPDIF in Menu 462. and select *2CH In* in Menu 002.)

Analog 1 – 8 When selected, input to tracks 17 – 24 is taken from inputs 1 – 8 of the analog I/O module (IF-AN24) if installed. This is useful if the MX-2424 is connected to an analog mixer with 8 busses.

Dig In 1 – 8 When selected, input to tracks 17 – 24 is taken from inputs 1 – 8 of a digital I/O module (IF-AE24, IF-AD24 or IF-TD24) if installed. This is useful if the MX-2424 is connected to a digital mixer with 8 busses.

451 Dig In Rate Conv

This Menu toggles On/Off the sample rate converter built into the 24-channel AES/EBU digital I/O module **[52]** if installed. (NOTE: The TDIF and ADAT modules do not have sample rate conversion so this Menu will have no effect when a TDIF or ADAT module is installed.)

461 2CH In Rate Conv

This Menu toggles On/Off the sample rate conversion process available on the stereo **AES/EBU [55]** and **SPDIF [54]** digital inputs.

462 2CH In Source

This Menu selects either the **AES/EBU [55]** or **SPDIF [54]** input for transferring stereo audio into the MX-2424 digitally. (NOTE: When using input it may be necessary to enable sample rate conversion under Menu 461 and select the appropriate Sample Reference under Menu 002.

465 2CH Out Select

With this Menu it is possible to select any adjacent Odd/Even pair of tracks for output from the stereo **AES/EBU [55]** and **SPDIF [54]** connectors on the back of the MX-2424. Both connectors will simultaneously output signal from the same pair of tracks. (NOTE: When using this feature it will also be necessary to choose AES/EBU or SPDIF protocol under Menu 466.)

If selected to *Silent Clock*, the stereo AES/EBU and SPDIF out connectors will output clock only. This can be useful if an external device needs to be digitally clocked to the MX-2424 using an XLR or RCA connector. (The default setting is 1,2.)

466 2CH Out Encoding

It is possible to output stereo digital audio in either AES/EBU or SPDIF protocol from both the XLR and Coaxial stereo digital outputs on the rear of the MX-2424. This Menu selects either AES/EBU or SPDIF protocol for these outputs. (NOTE: When set to SPDIF the MX-2424 does not enable the copy protection bit.)

Professional	AES/EBU
Consumer	SPDIF

Menu Bank 500: Audio Controls

510 Crossfade Length

When punching in/out or editing on digital audio the MX-2424 will generate a crossfade in RAM so there will not be a click at the punch/edit point. The crossfade value choices are in milliseconds and are as follows: 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 13, 15, 18, 22, 30, 45, and 90. (Default is 10ms.) Any crossfade will be applied in real time and heard when punching in or out of record.

540 Gapless Punchout

Gapless Punchout allow the ability to immediately switch from monitoring input audio to previously recorded audio without any delay. This Menu allows this feature to be turned off if desired. (Default is On.) (NOTE: This affects monitoring functions only, actual audio punching is always gapless.

(NOTE: When repeatedly punching 12 or more tracks in & out of record simultaneously with Gapless Punchout enabled in Non-Destructive Record Mode during a short period of time a “Media Too Slow” error message may be displayed. In the unlikely event that this occurs it will be necessary to spread the punches out over separate passes, reduce the number of tracks being recorded or turn Gapless Punchout off.)

The setting of this Menu has no meaning in TL-TapeMode since it is, by nature, gapless.

Menu Bank 700: Disk

700 Disk Encoding

The setting of this Menu determines the audio file format and bit depth recorded by the MX-2424. The setting of this Menu applies only to newly recorded audio files, and will not alter audio files that are already recorded on the disk. It is possible to change this setting in the middle of a Project so that both 16-bit and 24-bit audio files exist within the same Project. The possible choices are:

SDII 16-Bit	Records 16-bit Sound Designer II audio files to a Mac formatted disk.
SDII 24-Bit	Records 24-bit Sound Designer II audio files to a Mac formatted disk. (Default)

701 Rec Disk

The setting of this Menu determines the target disk for recording audio files. Only one target disk is possible at a time for audio recording. Disks are represented by their SCSI ID numbers.

702 Rec Disk Status

This is a detailed display indication only of the format of the currently selected Record Disk. It is not possible to make changes to any setting from this menu. The possible indications are:

Apple HFS
Unkown Format

703 Rec Disk Free

This is a dynamic display indication of approximate recording time left on the disk based on the number of tracks selected for recording. It is updated as more tracks are record-enabled.

710 Disk Initialize

This Menu Utility will initialize the selected disk. This is a fast way to erase an entire disk. INITIALIZING A DISK WILL ERASE ALL AUDIO ON THE DISK. THERE IS NO UNDO. Before a disk is initialized it must be un-mounted.

The SCSI ID location of the disk to be initialized must first be chosen. Use **TRIM [40]** to select the correct disk:

Init Disk 0

Thru

Init Disk 6

Then the MX-2424 will prompt for confirmation.

The MX-2424 will initialize the disk to the Apple™ HFS disk format (Mac OS Standard). If it is necessary to mount the disk on a Macintosh™ then the disk may be initialized on the Macintosh™ to Mac OS Standard before recording audio on the MX-2424. If audio has been recorded on a disk with the MX-2424 and it is later determined that the disk must be mounted on a Macintosh then Hard Disk Toolkit 3.0™ must be used to install driver software on the disk without affecting the recorded audio. It is necessary to restart the Macintosh to complete driver installation.

711 Disk Low Format

This Menu Utility will perform a low level format on the specified drive. This is different from initializing a disk because it erases the disk sector by sector instead of just erasing the disk's directory information. Low Level Formatting a disk takes longer than initializing a disk but should be performed periodically to keep the disk in optimal condition. LOW LEVEL FORMATTING A DISK WILL ERASE ALL AUDIO ON THE DISK. THERE IS NO UNDO. After low level formatting a disk it will be necessary to initialize it in order to use it. Additionally, performing a Low Level Format on a disk will map out any bad sectors on a new disk. Before a disk is formatted it must be un-mounted. If it is attempted to format a drive that is still mounted an error message will be displayed in the LCD. (NOTE: This operation takes approximately 20 minutes for a 9 gig drive and should not be interrupted. If the process is interrupted the drive will not be usable until a low level format is completely performed.)

The SCSI ID location of the disk to be formatted must first be chosen. Use **TRIM [40]** to select the correct disk:

Format Disk 0

Thru

Format Disk 6

Then the MX-2424 will prompt for confirmation.

720 Disk Cleanup

This Menu Utility is used to free up disk space by deleting all audio files from the disk that are associated with Projects that have been deleted by the MX-2424. THERE IS NO UNDO FOR THIS UTILITY. This process will NOT remove any virtual tracks that are associated with a project. When this utility is selected it is necessary to select the SCSI ID location of the disk to be Cleaned Up:

Cleanup Disk 0

Thru

Cleanup Disk 6

730 Backup Erase

This Menu Utility is used to erase a piece of backup media such as a DVD-RAM disk or Travan tape.

The SCSI ID location of the media to be erased must first be chosen. Use **TRIM [40]** to select the correct disk:

Erase Disk 0

Thru

Erase Disk 6

Then the MX-2424 will prompt for confirmation.

740 Disk Copy Status

This is a display indication that shows the percentage of the Smart Copy/TapeMode Convert process that is complete. It is not possible to make changes to any setting from this menu. This display appears automatically when a Smart Copy or TapeMode Convert operation is initiated.

790 SCSI ID's Mounted

This is a display indication only of the SCSI ID number of drives that are currently mounted on the MX-2424.

Menu Bank 800: Project

800 Project Name

From this Menu it is possible to create a new Project simply by creating a new and unique file name. As soon as audio is recorded for a new Project, audio file directories will be automatically created. To access this Menu directly, press **SHIFT [19]** then **PROJ<NEW> [45]**. If a project is already loaded into the MX-2424 a new project name will automatically be created that is the same as the loaded project with an additional numerical suffix.

810 Track Prefix

Whenever new audio events are created by the MX-2424 this user-definable default prefix will become part of the Event Name. This prefix may not exceed 7 characters. If a prefix longer than 7 character is attempted any characters above the 7th will be truncated.

820 File Prefix

Whenever new audio files are recorded by the MX-2424 this user-definable default prefix will become part of the File Name.

Menu Bank 900: System

900 Store Settings

This Menu allows the current MX-2424 configuration to be stored to one of eleven User Presets. All Menu settings are stored into these User Presets. The possible choices are:

User 1 – 10	Memory locations for storage of User Preset configurations.
User Default	If there is something stored to this location then it will be used as the default setting at power up. If nothing is stored here then the factory default setting will be used.

901 Recall Settings

This Menu allows stored configurations to be recalled to become the current MX-2424 configuration. The possible choices are:

User 1 – 10	Memory locations for storage of User Preset configurations.
User Default	If there is something stored to this location then it will be used as the default setting at power up. If nothing is stored here then the factory default setting will be used.
Factory Default	Factory Default Settings

910 Set Date

This Menu Utility allows the system date to be set using the **TRIM** key and the numerical keypad.

911 Set Time

This Menu Utility allows the system time to be set using the **TRIM** key and the numerical keypad. The time is entered in 24-hour format.

920 LED Brightness

This Menu Utility adjusts the brightness of the LED's and Meters on the MX-2424.

940 Machine Name

This Menu Utility allows you to name your MX-2424 with up to a ten-character name. This menu is used to distinguish multiple units when using ViewNet on a network.

930 Machine I.D.

This displays the ID number of your MX-2424 that would be displayed in ViewNet. It is not possible to change it.

950 IP Address

With this Menu Utility it is possible to set the IP Address to suit individual network needs. The first nine numbers of this address must be the same on all TASCAM hard disk recorders and network computers on the same network. Individual machines are determined by the last three numbers, which must be unique to each machine and computer on a network. (NOTE: if you attach your MX-2424 to a local network please make sure your IP settings do not conflict with another device on the network.) Please refer to the *ViewNet Manual* for more detail.

951 IP Net Mask

This Menu Utility is used to enter the IP Net Mask. This should be set to 255.255.255.000 and should not be changed unless your network administrator advises that a different setting should be used. Please refer to the *ViewNet Manual* for more detail.

952 IP Gateway

This Menu Utility is used to enter the IP Gateway. This value is factory preset to 000.000.000.000 and should not be changed unless the ViewNet network is part of a larger network which uses a Gateway. If there is no Gateway in use, there is no need to enter any data in this menu. Contact your network administrator if you are unsure.

990 Software Version

This displays the version number of the software currently installed in the MX-2424.

995 Save S/W To Card

This Menu Utility allows the firmware in the MX-2424 to be stored to a TL Media card inserted in the **TL Media Slot [22]**. (Please refer to *MX-OS Operations* for details.)

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TimeLine 2000

Advanced Functions
Using Auto Punch, Loop Mode & Virtual Tracks

Auto Punch, Loop Mode and Virtual Track functions are separate operations, however they are very powerful when used together so they will be covered together in this section.

Using Auto Punch

Auto Punch mode is used for automating record/rehearse punching. There are times, when operating the MX-2424 alone, when it is helpful to have the machine automatically perform transport functions and record/rehearse punching. This allows the operator to play a musical instrument while the MX-2424 executes a punch and will allow manually performed punches to be repeated automatically.

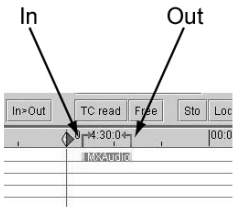
The Auto Punch function uses the Edit In and Out points to determine the punch in and out points for recording/rehearsal. There are three ways to set the In and Out points:

Direct Entry: A time code value can be entered with the **NUMERIC KEYS [17]** then stored to the In or Out location by pressing **STORE [20]** then **IN [30,69]** or **OUT [31,70]**.

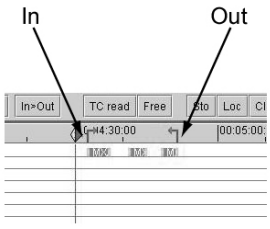
Capture: In and Out points may be captured "on the fly" with the transport running or with the transport stopped. Press **CAPT [16,71]** to capture the time code value in the top line of the **LCD [18]**, which is the current location of the play head, into the bottom line of the **LCD [18]**. With the **CAPT LED** flashing press **IN [30,69]** or **OUT [31,70]** to store the captured value to the In or Out location. Note that the time code value is captured at the time the **CAPT [16,71]** button is pressed. **CAPT [16, 71]** may be pressed repeatedly, continually updating the captured value until a target is determined.

Automatic: Every time a punch is manually performed the In and Out points are automatically updated by the MX-2424 to match the most recently executed punch. When a single record operation is performed during a pass the In and Out points are placed at the beginning and the end of the newly recorded audio event when the transport is stopped. When multiple record operations are performed during a single pass the In and Out points are placed at the beginning of the first newly recorded audio event and the end of the last newly recorded audio event when the transport is stopped. The screen shots below from ViewNet illustrate this.

Automatic Edit Point Update



Single Record Operation



Multiple Record Operations

Press **SHIFT [19]** then **REC [37]** or **REH [36]** to enable Auto Record or Auto Rehearse mode. When the MX-2424 is enabled for Auto Record/Rehearse the **REC/REH** LED will flash to indicate that when the transport is engaged a record/rehearse operation will be executed at the current In/Out points. To cancel Auto Record/Rehearse mode press the **REC [37]** or **REH [36]** button again and the LED will stop flashing indicating that Auto Punch mode has been disabled.

Using Loop Mode

There are three Loop Modes determined by Menu 210 as described below:

Play Repeatedly	This setting will cause the MX-2424 to play from the In point (with Pre-Roll) through the Out point (with Post-Roll) repeatedly until the **STOP** key {34} is pressed. (This is the default setting.)
Play Once & Cue	This setting will cause the MX-2424 to play from the In point (with Pre-Roll) through the Out point (with Post-Roll), then locate back to the In point (with Pre-Roll) and stop, disengaging the **LOOP** key.
Play Once & Stop	This setting will cause the MX-2424 to play from the In point (with Pre-Roll) through the Out point (with Post-Roll) and stop, disengaging the **LOOP** key.

Once the desired Loop Mode is set in Menu 210, Loop Mode may be used as described below:

From the MX-2424:
Press **LOOP [26]** to immediately initiate the Loop operation as set in Menu 210 relative to the In and Out points.
To cancel Loop mode press **STOP [34]**.
It is also possible to cancel Loop mode on the fly by pressing PLAY. In this case LOOP will be disengaged and the transport will continue playing. If the MX-2424 is recording then pressing PLAY will also punch out.

From the RC-2424:
Press **LOOP [74]** to immediately initiate the Loop operation as set in Menu 210 relative to the In and Out points on the MX-2424 currently selected by the **MACHINE SELECT [72]** keys.
To cancel Loop mode press **STOP [34]**.
It is also possible to cancel Loop mode on the fly by pressing PLAY. In this case LOOP will be disengaged and the transport will continue playing. If the MX-2424 is recording then pressing PLAY will also punch out.

(NOTE: The MX-2424 will not loop over "midnight" {time code location 00:00:00:00} including Pre/Post Roll. If it is necessary to use 00:00:00:00 as the In point of a Loop operation then the pre-roll will have to be set to zero.)

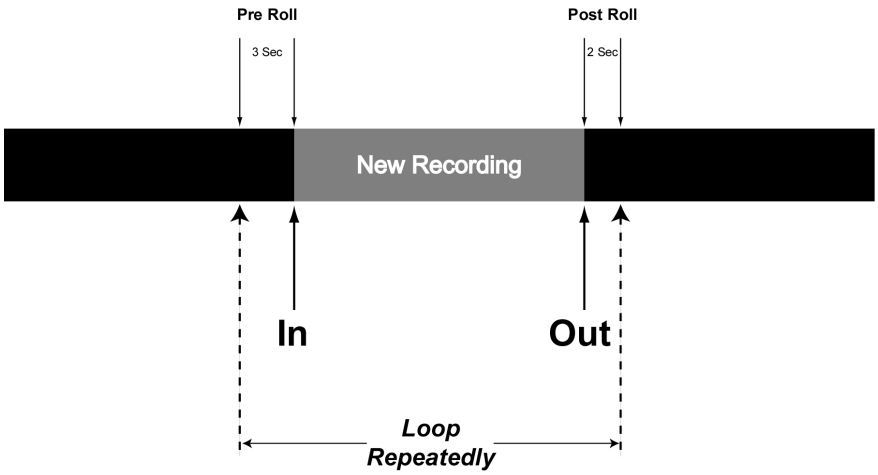
Using Auto Punch with Loop Mode

If the MX-2424 is set to perform an Auto Record/Rehearse and Loop Mode is engaged then the Auto Punch will be executed at the In and Out points during the Loop operation. When used in this way the MX-2424 will function as described below for the three possible settings of Menu 210.

Play Repeatedly

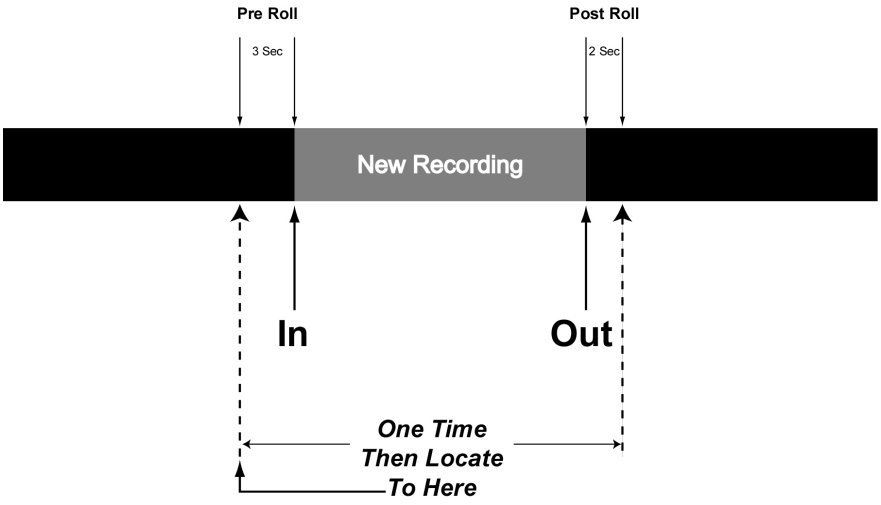
This setting will cause the MX-2424 to play from the In point (minus Pre-Roll), punch in at the In point, punch out at the Out point and continue playing for the amount of time set as Post Roll then repeat until **STOP [34]** is pressed or Loop Mode is cancelled. (This is the default setting.)

If recording in Non-Destructive mode recording passes may be undone with the **UNDO [12]** button. NOTE: No Undo is available when recording in TapeMode.

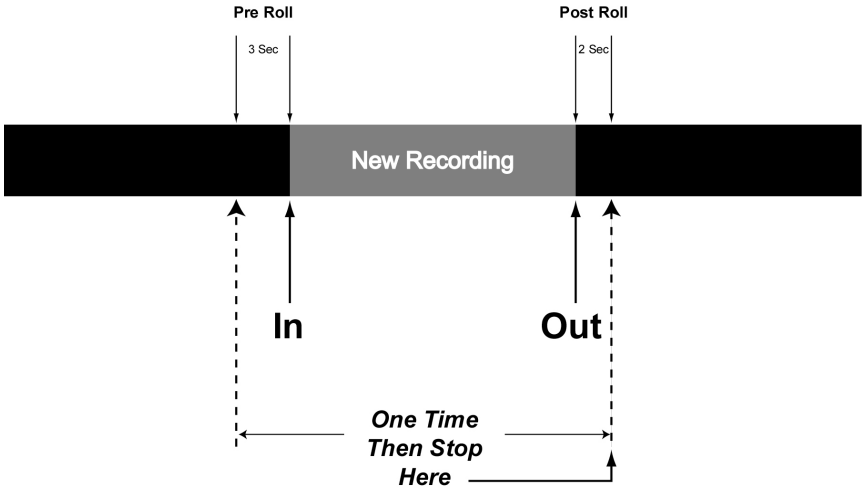


Play Once & Cue

This setting will cause the MX-2424 to play from the In point (minus Pre-Roll), punch in at the In point, punch out at the Out point and continue playing for the amount of time set as Post Roll then locate back to the In point (minus Pre-Roll) and stop, disengaging Loop Mode. (This is similar in operation to a TASCAM DTRS machine.)



Play Once & Stop This setting will cause the MX-2424 to play from the In point (minus Pre-Roll), punch in at the In point, punch out at the Out point and continue playing for the amount of time set as Post Roll then stop, disengaging Loop Mode.



When using Loop Mode in combination with Auto Punch it is possible to cancel the Loop operation on the fly by pressing REC/REH or by holding REC/REH and pressing PLAY (as determined in Menu 202). When Loop Mode is cancelled in this way during an Auto Record operation the MX-2424 will continue to record until manually punched out.

Using and Managing Virtual Tracks

Virtual Track Overview

The MX-2424 is capable of up to 999 Tracks per project. 24 of those tracks can be played back at once. This allows up to 975 virtual tracks to be utilized/stored in a project for alternate takes, work tracks, etc. The process of managing these Virtual Tracks is called loading and unloading. Only one track may be loaded at a time per playback track.

24 Physical Tracks "Loaded" for playback

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24

975 Virtual Tracks "Unloaded"

Any of these virtual tracks can be loaded into any of the 24 physical tracks for playback.
Use these tracks for Alternate Takes, Work Tracks for layering of sounds,
different lyrics on a vocal track, etc.

Unloading a track removes it from the Physical Track location where it is played back by the MX-2424 while leaving the audio file(s) on the hard drive. Loading a track places it into the specified Physical Track location for playback. When operating in non-destructive record mode there may be many audio files associated with a single track. When operating in TapeMode there is only one audio file per track.

Manually Unloading Tracks

To select a track for unloading, press **VIEW [46]** then use the **UP/DOWN [41,43]** arrow keys, **SCRUB [42]** wheel or the **Individual Track Selection Keys [4]** to choose a track. The SEL indicator will be flashing on the selected track. Press **<SHIFT> [19]** then **VIEW<UNLOAD> [46]** to unload the selected track. Track selection will automatically advance to the next track. There is no UNDO for the track unloading operation.

Loading Tracks

To Load a Virtual Track into a Physical Track location for playback:

1. From the normal time code display in the **LCD [18]** press **PROJ [45]** twice.
2. Use the **UP/DOWN Arrow [41,43]** buttons to select the project that contains the virtual track that is to be loaded.
3. With the desired project displayed in the **LCD [18]** Press **PROJ [45]**.
4. Use the **UP/DOWN Arrow [41,43]** buttons or the **SCRUB Wheel [42]** to select the virtual track to be loaded. The name of the virtual track will be displayed in the lower half of the **LCD [18]**.
5. Use the triangular **Track Select Keys [4]** to select the Physical track to load the Virtual track into. The name of the Physical playback track will be displayed in the upper half of the **LCD [18]**.
6. Press **YES [20]**.

Moving Tracks

To move a track from one physical playback location (1-24) to another:

1. From the normal time code display in the **LCD [18]** press **PROJ [45]** twice.
2. Use the **UP/DOWN Arrow [41,43]** buttons to select the project that contains the track that is to be moved.
3. With the desired project displayed in the **LCD [18]** Press **PROJ [45]**.
4. Use the **UP/DOWN Arrow [41,43]** buttons or the **SCRUB Wheel [42]** to select the track to be moved. The name of the track will be displayed in the lower half of the **LCD [18]**.
5. Use the triangular **Track Select Keys [4]** to select the destination track. The name of the destination track will be displayed in the upper half of the **LCD [18]**.
6. Press **YES [20]**.

Renaming Tracks

1. Press **PROJ [45]**
2. Press the **UP** or **DOWN Arrow [41,43]** button until *Rename* is displayed in the **LCD [18]**
3. Press **PROJ [45]**
4. Press the **UP** or **DOWN Arrow [41,43]** button until the name of the project is displayed that contains the track to be renamed.
5. Press **PROJ [45]**
6. Use the **UP/DOWN Arrow [41,43]** buttons to select the track to be renamed.
7. Press **YES [20]**
8. Press **TRIM [40]**
9. Use the **SHTL Ring [42]** to move the cursor under the character to be changed and the **UP/DOWN Arrow [41,43]** buttons or **SCRUB Dial [42]** to change the character
10. Press **YES [20]** when finished and **YES [20]** again to confirm
11. Press **CLEAR [15]** before renaming another track.

211 Loop Record

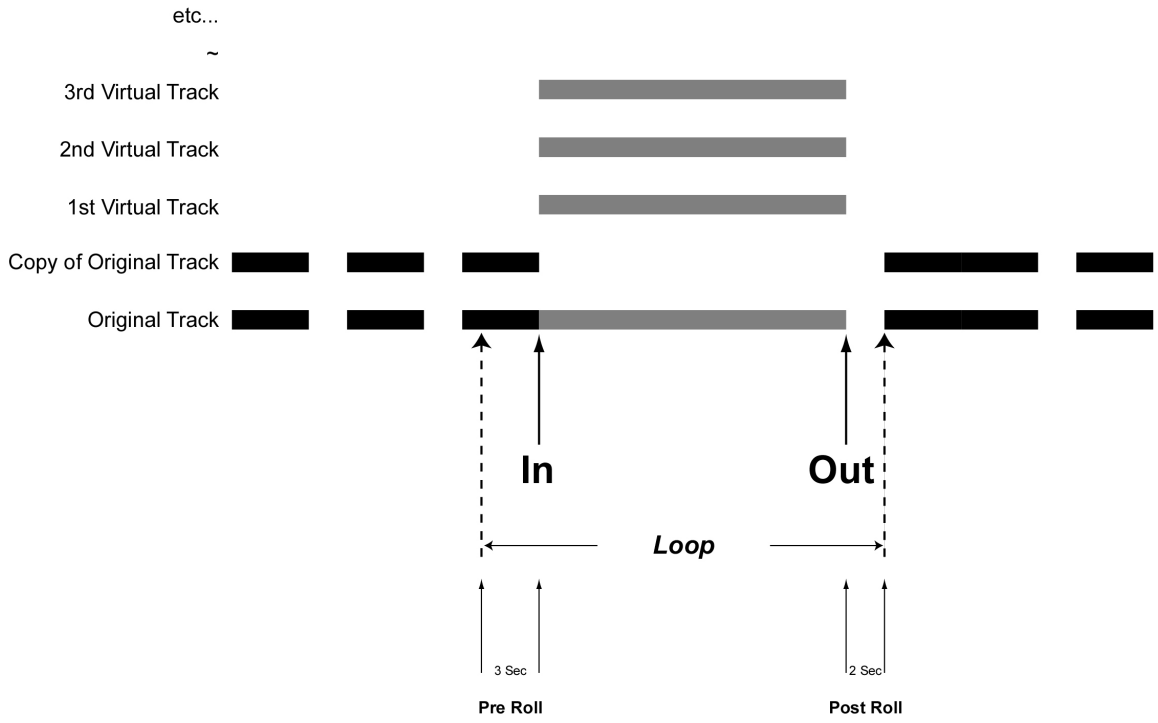
This Menu allows automatic creation of virtual tracks when a record operation is performed. The **STOP [34]** key can be pressed at any time to immediately cancel any recording or Loop operation. (Default setting is OFF.)

Auto Unload On/Off

This setting will create a new virtual track each time a Loop/Auto Record operation takes place. Each new track created will maintain the same track name while increasing the track's numerical extension one number for each new recording. This is done by unloading the track last recorded on before recording a new one. Once an audio file is unloaded it becomes a virtual track and can then be loaded into any physical track on the MX-2424. (NOTE: If using this function in Non-Destructive Record Mode all audio events on a track will be unloaded along with the newly recorded section before recording the next virtual track. In this case it will be necessary to load the original track along with all the virtual tracks for comparison/editing when virtual tracking is completed.)

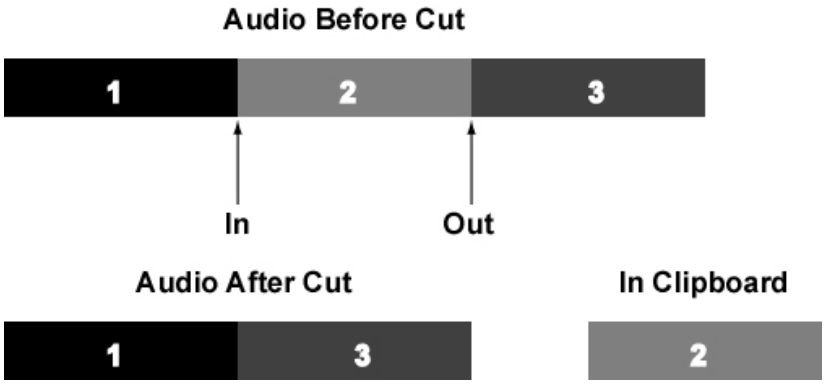
(NOTE: The Record w/Unload function only works when used with Auto Record and Loop Mode together. This function does not work with Auto Record alone or manual punching.)

It may be helpful when creating Virtual tracks automatically in this way to make a copy of the original track then clear the section to be recorded as shown in the diagram below.

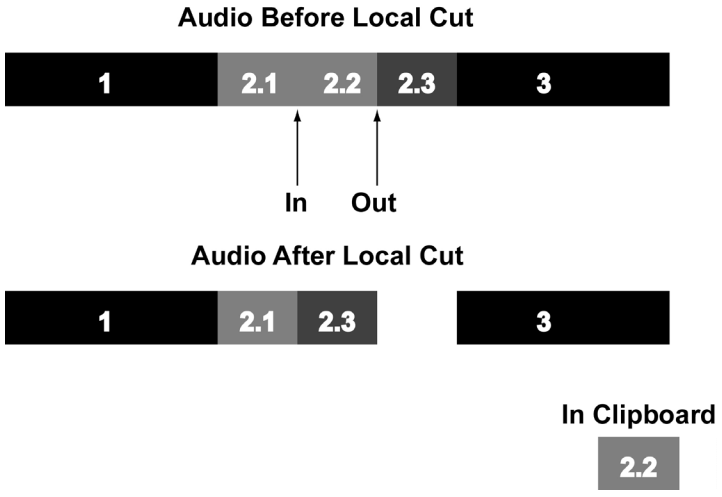


Editing Functions

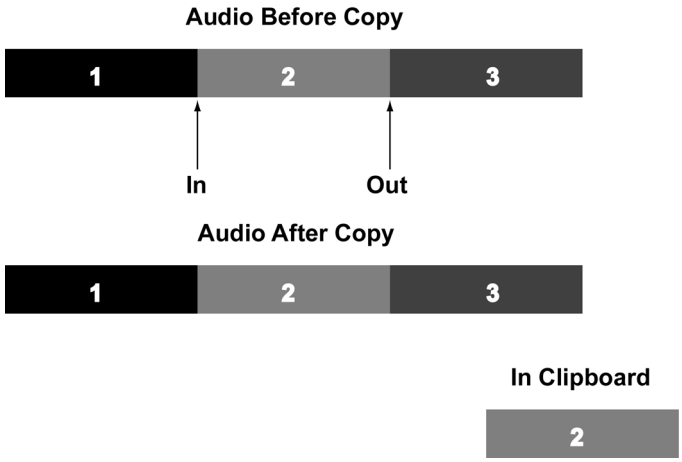
CUT
The CUT function removes the audio from the selected track(s) between the In and the Out points and places it into the clipboard. All subsequent audio will be slipped earlier in time to replace the audio that was cut.



LOCAL CUT
(SHIFT then CUT)
The LOCAL CUT function removes the audio from the selected track(s) between the In and the Out points within an audio event and places it into the clipboard. Subsequent audio within that event will be slipped earlier in time to replace the audio that was cut. Subsequent events will not move.

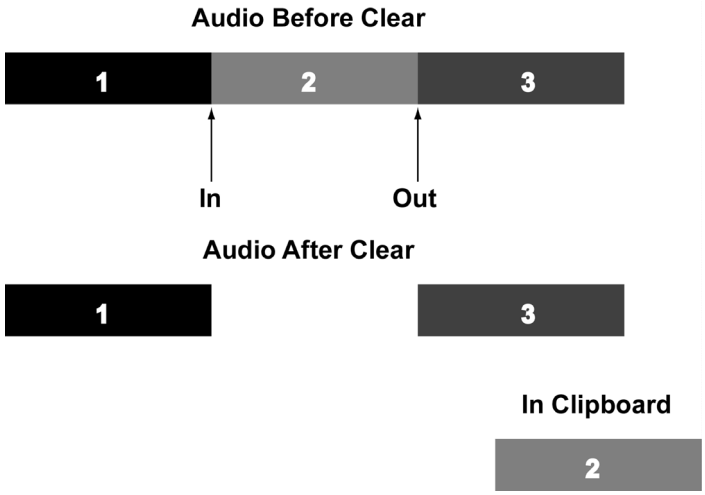


COPY
The COPY function copies the audio from the selected track(s) between the In and Out points and places it into the clipboard.

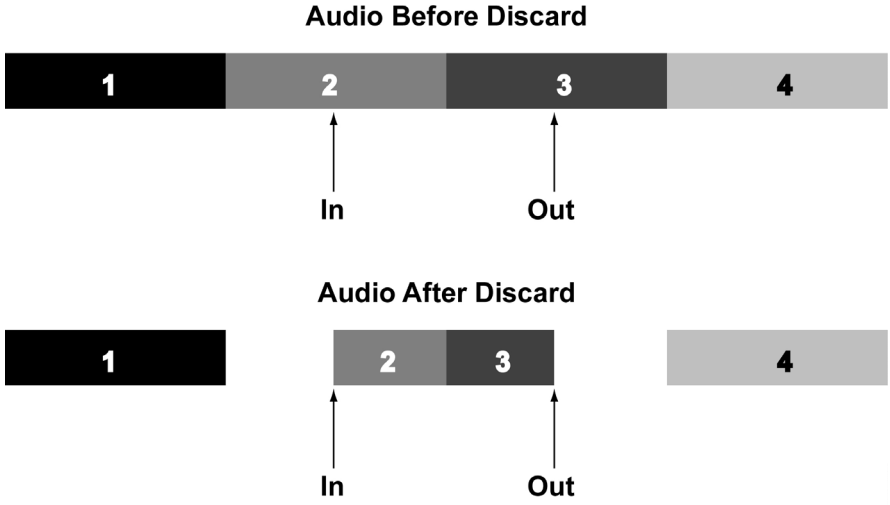


SPLIT
(SHIFT then COPY)
The SPLIT function creates an event boundary at the play head location.

CLEAR
The CLEAR function removes the audio between the In and Out points, replacing it with silence. It does not affect the position of any other audio material on the track(s). The clipboard is not affected.

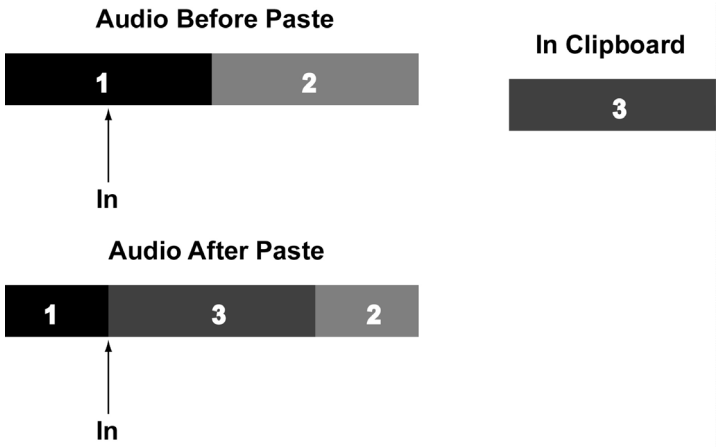


DISCARD
(SHIFT then CLEAR)
The DISCARD function removes the audio on both sides of the In and Out points, replacing it with silence but will NOT remove audio beyond the next or previous edit boundaries. The clipboard is not affected.



PASTE

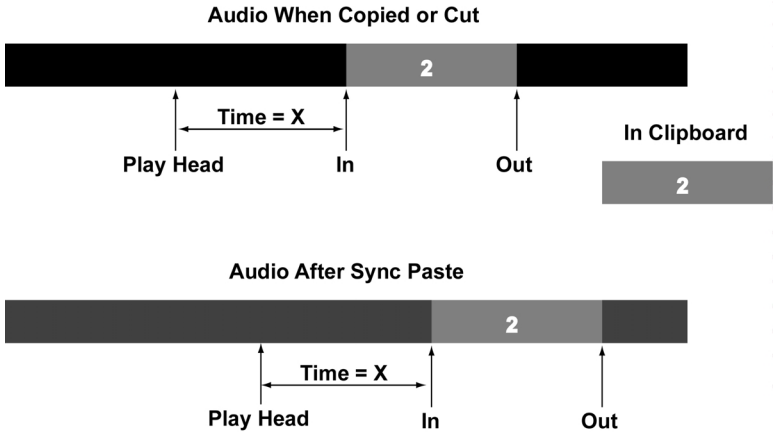
PASTE places the contents of the clipboard into the selected track(s) at the position of the In point and overwrites any existing material on those selected tracks starting at the In point and extending for the duration of the clipboard contents. PASTE does not alter the placement of any other material on the track(s).



SYNC PASTE

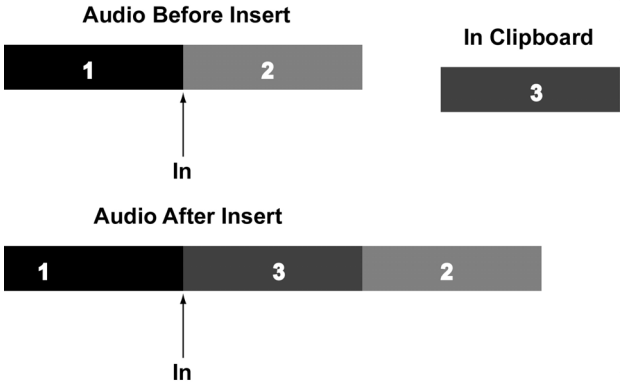
(SHIFT then PASTE)

Sync paste is similar to PASTE, but it allows the user to reference a location defined by the position of the play head other than the IN point. Essentially, the difference between the play head and the IN point when the audio is copied is maintained when a SYNC PASTE is performed. New IN and OUT points are generated at the Sync Past location. This allows the user to reference a downbeat in music or visual event in a video playback.



INSERT

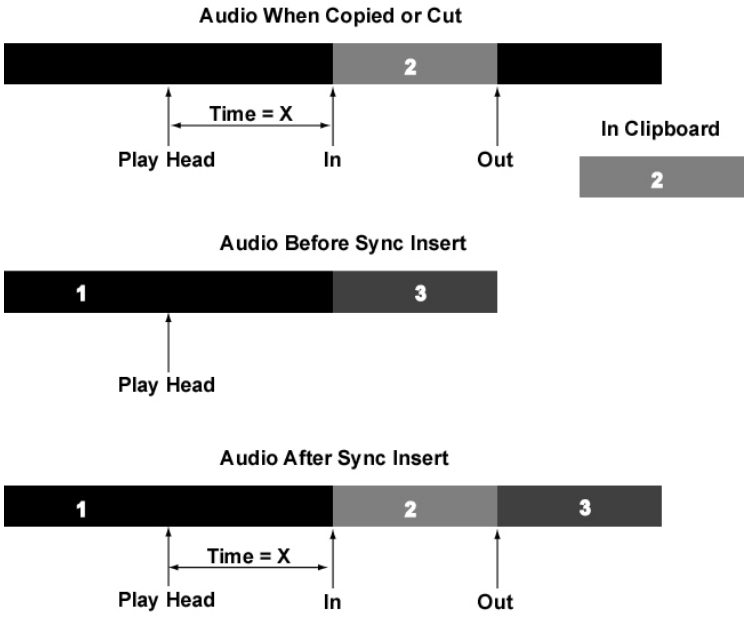
INSERT places the contents of the clipboard into the selected track(s) at the In point, while slipping all subsequent audio on the selected tracks later in time an amount equal to the inserted audio.



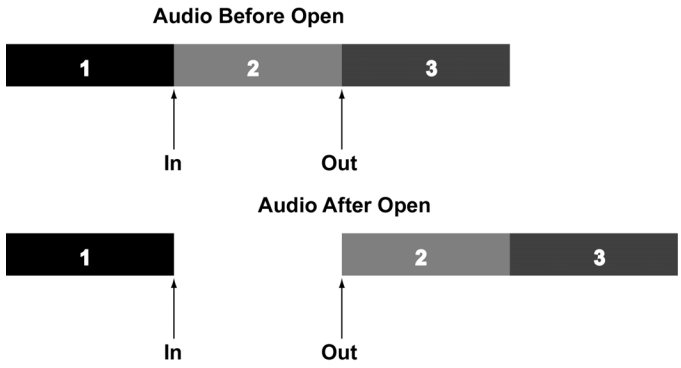
SYNC INSERT

(SHIFT then INSERT)

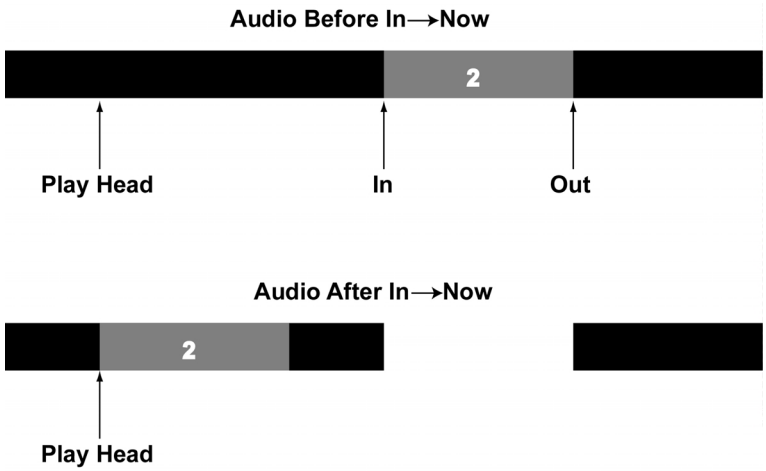
Sync insert is similar to SYNC PASTE except instead of pasting over existing audio, the audio is moved later in time an amount equal to the pasted audio. Essentially, the difference between the play head and the IN point when the audio is copied is maintained when a SYNC INSERT is performed. New IN and OUT points are generated at the Sync Insert location. This allows the user to reference a downbeat in music or a visual event in a video playback.



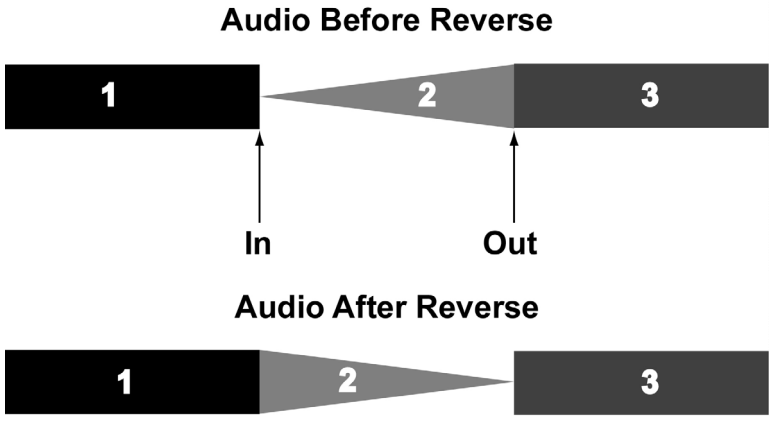
OPEN
OPEN places a segment of silence into the selected track(s) at the In point equal to the time between the In and Out points, while slipping all subsequent audio later in time an amount equal to the time between the In and Out points.



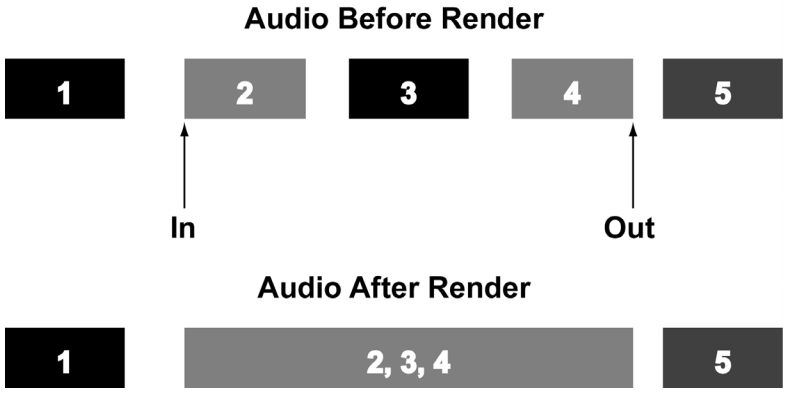
IN→NOW
(SHIFT then OPEN)
This function will move the audio defined by the In and Out points to the current position of the play head overwriting any existing audio event(s). The audio's In point is placed at the play head.



REVERSE
(SHIFT then UNDO)
The Reverse function reverses the audio on edit-enabled track(s) between the In and Out points. This function will split audio events if necessary.



RENDER
(SHIFT then REDO)
The Render function creates a single continuous audio file from multiple audio events on edit-enabled track(s) between the In and Out points.



UNDO
This steps backward through the Undo history.

REDO
This steps forward through the Undo history.

MX-OS OPERATIONS

MX-2424 MX-OS Backup & Update Procedures

MX-OS is the system software that the MX-2424 runs. It is stored in Flash ROM inside the MX-2424 for ease of update and speed of power up. This provides the additional advantage of a flexible system so features can easily be added to your MX-2424 as they are developed.

From time to time MX-OS updates will become available on the TASCAM web site (http://www.tascam.com) as new features are added. Those updates can be downloaded to a Mac or PC then transferred to the MX-2424 via Ethernet. The steps below detail the process of backing up and updating MX-OS.

Storing MX-OS to a TL Media Card

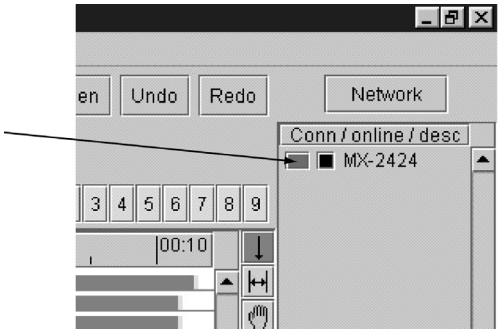
The MX-2424 ships with a blank TL Media card to be used during the MX-OS update procedure. All MX-OS transfers from a computer to the MX-2424 occur via the TL-Media card. This prevents problems in the event that power is lost during the update procedure. The first step of this process is to store the version of MX-OS in the MX-2424 to the TL Media card. From there it can be archived to a Mac or PC. This will also enable the MX-2424 to be started and MX-OS to be reloaded from the TL-Media card in the unlikely event that the Flash ROM in the MX-2424 gets zapped as could happen during a power surge or brown-out. (NOTE: It is recommended that the MX-2424's power be connected to an Un-interruptable Power Supply {UPS} or a quality surge protector.)
It is not necessary to connect the MX-2424 to a computer for the following procedure:

1. Press **SETUP [44]** and scroll to Menu 995. Press **STORE [20]** and confirm by pressing **STORE/YES [20]**.
2. You will be prompted to Insert Blank TL Media. (NOTE: Any data on the TL Media card will be lost during this process.) Insert a TL Media card and press **STORE/YES [20]**. After briefly displaying Menu 995 again the LCD will show *Formatting TLMedia*. This takes approximately 2 minutes, do not press any keys during this process. (NOTE: The card goes in with the notch (chamfer) down and the gold contact facing right.)
3. The LCD will then display the progress of writing data blocks to the TL Media card. This will take about 5 minutes.
4. When finished, the LCD will display *Software Saved*. Press CLEAR twice and remove the TL Media card.

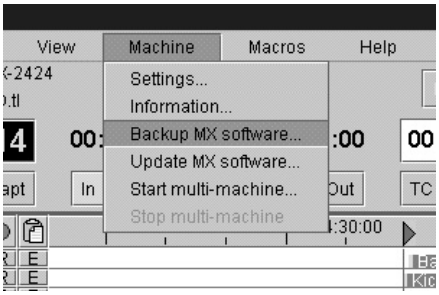
Backing Up MX-OS to a Computer

It may be desirable to save the version of MX-OS that is currently installed in the MX-2424 to a computer to ensure that version is safely archived if it is ever needed again. With the MX-2424 connected to a Mac or PC via 100Mb Ethernet the steps below will save the version of MX-OS in the MX-2424 to the computer.

1. Launch the ViewNet application.
2. From the ViewNet Network Screen highlight the MX-2424 that has the version of MX-OS to be saved or make it active in the Edit Screen by clicking on its Connection button as shown below. The button will turn blue and the MX-2424 will appear in the Edit Screen.



3. Select Backup MX Software from the Machine Menu.

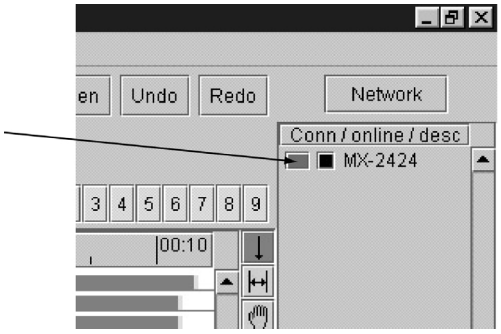


4. Determine a location on the computer to save the MX-OS file from the MX-2424. It may be convenient to create a folder to contain new versions of MX-OS as they are released. Then inside that folder each version could have its own folder to contain the MX-OS file and any associated documentation. (NOTE: This manual assumes the user has a working knowledge of the Mac OS and/or Windows.)
5. Type in a file name for the MX-OS file. Using the version number of the MX-OS file is a good way to keep track of the MX-OS versions stored on your computer. The version of MX-OS in the MX-2424 can be seen in Menu 990.
6. Click SAVE – in about 20 seconds a confirmation will appear that the MX-OS backup was successful.

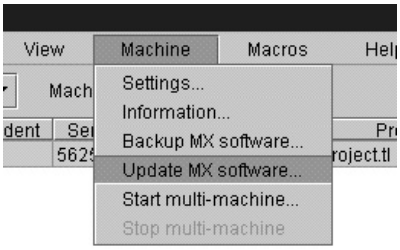
Updating MX-OS on an MX-2424

Whenever a new version of MX-OS becomes available it will be posted to the TASCAM Web site for download (http://www.tascam.com). Self-extracting files for both Mac and PC will be posted along with documentation in PDF format. The steps below detail the process of updating the version of MX-OS in an MX-2424:

1. Download the latest version of MX-OS from the TASCAM web site. Place the file into the desired folder that will contain the MX-OS file and its documentation. It is a self-extracting archive so simply double-clicking on the file will extract the MX-OS file and documentation files into that folder.
2. Launch the ViewNet GUI application.
3. Insert the TL Media card that will be used to store the new MX-OS and update the MX-2424. (NOTE: Any data on the TL Media card will be lost during this process.)
4. From the ViewNet Network Screen highlight the MX-2424 that has the TL Media card inserted or make it active in the Edit Screen by clicking on its Connection button as shown below. The button will turn blue and the MX-2424 will appear in the Edit Screen.



5. Select Update MX Software from the Machine Menu.



6. Locate the MX-OS file that was created by the self-extracting archive and Open it.
7. The TL Media card will be formatted, this takes about 2 minutes. (NOTE: This may take longer on a Macintosh. When using a Mac, all applications that are using the Ethernet port must be shut down.) Then the new version of MX-OS will be written to the TL Media card. The LCD will display the progress of writing data blocks to the TL Media card. When finished, *Update Software Completed* will be displayed in the LCD and instructions will be displayed in ViewNet.
8. Leave the TL Media card in its slot and cycle the power on the MX-2424. The Flash ROM in the MX-2424 will be updated with the MX-OS from the TL Media card.
9. When the update is completed, cycle the power on the MX-2424 again to complete the update.
10. If the RC-2424 is connected then its software will be automatically updated.

TASCAM
TEAC Professional Division
MX-2424
RC-2424

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